AMERICAN ANNALS

OF

The Deaf

ORGAN OF THE CONFERENCE OF EXECUTIVES OF AMERICAN SCHOOLS FOR THE DEAF, AND THE CONVENTION OF AMERICAN INSTRUCTORS OF THE DEAF

EDITED BY

IRVING S. FUSFELD

UNDER THE DIRECTION OF

PERCIVAL HALL, OF THE DISTRICT OF COLUMBIA; FRANK M. DRIGGS, OF UTAH; THOMAS S. McALONEY, OF COLORADO; HERBERT E. DAY, OF MISSOURI; MADISON J. LEE, OF KENTUCKY; AND J. W. BLATTNER, OF OKLAHOMA.

EXECUTIVE COMMITTEE OF THE CONFERENCE

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ADULT EDUCATION FOR THE DEAF

Hence, we may well admit that it is not the education of children that can save the world from destruction; it is the education of adults; it is the adult who must be released from his provincial-mindedness, his animistic prejudices, his narrow customs, his obsolete habits; it is the adult who must be given the chance to become free in a world of science, tolerance, human sympathy and intelligent organization.

JOSEPH K. HART.

Whether we prefer it or not, we are living in an age of industry that is compelling us to revise our theories about education even though we may not be, as individuals, industrialists, nor fully aware of what is going on in the great field of industry.

Dr. Charles H. Judd, of the University of Chicago, speaking on the subject of adult education recently said, "Indeed, it is true that the whole national plan of education has been compelled to expand because of the pressure which advancing civilization has brought to bear on the individual and, through the individual, on the educational system. The same causes which have filled our secondary schools and colleges are now creating a demand for the education of adults."

While the question of adult education is receiving more and more the serious consideration of the builders of our modern educational systems, there are certain fundamental difficulties that still remain to be overcome. The problem of the individual and the lack of organization of this great movement may be considered the two greatest factors hindering its progress. To organize adults of general, fixed habits and inclinations into a great workable system is a more difficult problem than to evolve a system for the training of youth. However, a casual survey of what is being done in this field will convince anyone of the tremendous strides that have already been made with adults, especially in the realm of industry.

It was my good fortune recently to visit six of the leading vocational or extension training schools in two of the

largest cities of New York State in which hundreds of adults were being given the opportunity for advanced training in the various trades in which they had already learned the fundamentals, either through apprenticeship or by practical experience. There were both day and night classes, all under skilled instruction, in which an adult could advance his technical knowledge to the highest degree and to incalculable advantage to himself.

While observing the wonderful opportunities thus offered to adults by these modern trade schools, the one thought uppermost in my mind was—are the adult deaf taking advantage of the special training thus afforded? Doubtless a few are, but so far as I have been able to learn, there has been no concerted effort to secure this training for them.

I do not believe the adult deaf who have had thorough elementary vocational training would find themselves too greatly handicapped in these special trades schools. The training is mostly through channels of performance; that is to say, by practice at the workbench, drawing table, or machine.

Progress has been made for more efficient vocational training in schools for the deaf to better prepare our deaf boys and girls to meet the demands imposed upon them by the wonderful opportunities which are being placed before their hearing brothers and sisters. This, we believe, should be supplemented by some effort to place before the adult deaf the advantages that are offered by the part-time schools and special classes. The task does not seem altogether impracticable.

Adult education, however, is not confined to the one field of industrial training. As Dr. Lawrence P. Jacks, of Oxford University, has recently said, "Training for a wise use of the increased amount of leisure offers a great opportunity." Leisure is now the possession of every individual, and as President Garfield once said, "Upon the use of that leisure the future of the nation will depend." So will the future and happiness of each individual de-

pend. It is essential, therefore, to use this leisure to gain as much cultural background as possible.

As an eminent educator has said, "The idea that education is a life-time process, that it can be obtained on a part-time basis and that it is cooperative effort, is increasingly accepted as the guiding principle of education."

Can we not as educators of the deaf instill into the minds of our pupils the importance of utilizing their leisure to some advantage. Teach them the philosophy of constant adjustment, of adapting themselves to new conditions.

The deaf have organized themselves into social and fraternal groups with marked success. This in itself is a phase of adult education quite essential but not sufficient.

It behooves the deaf to so organize and study that they may be able to give the greatest service to the community and to society in general, to be interested in and part of all social uplift; thereby pulling themselves up by their own efforts to a level with the best things of life. It is not progress to look ahead at the other fellow who has surpassed us in the race and whine and complain of our lot, but let us rather look upon those less fortunate than ourselves and help pull them along to better things. I once heard a prominent man say in speaking of his deaf neighbor, "He is one of our best citizens, a good neighbor, a faithful churchman; and we can always count on him for help in whatever we undertake for the good of the community." An example worthy of emulation.

No one is so handicapped geographically or otherwise in this age that he cannot have access, for instance, to good books, and this in itself is a great factor in the development of the individual.

The deaf should make every effort themselves to be more than a cog in a wheel. They should use every opportunity for self improvement, in order to be ready to take greater responsibilities as individuals and as members of

society, and thereby develop a more substantial basis of life.

With these few scattered generalities concerning adult education for the deaf, I will close this article with the suggestion that those of us responsible for the elementary training of deaf boys and girls see to it that we lose no opportunity to give them the broader concepts of life, that will lessen their handicap when they go forth to take their places in the world of constant changes and development, not only in the realm of industry but in that broader aspect of social and cultural adaptation in which they are to be a part.

Let us also in making up our scheme of education for the deaf child devise some plan whereby we may better acquaint ourselves with the great movement of adult education, which has become a permanent national necessity, and help give the great advantages which it offers to the adult deaf.

O. A. BETTS,
Principal of the Central New York School,
Rome, N. Y.

REPORT ON CERTIFICATION OF TEACHERS

Applications for certification under the plan adopted by the Conference of Executives of American Schools for the Deaf continue to come in with satisfying regularity, giving further strength to the feeling that the Conference has taken a noteworthy step in its efforts to set acceptable standards of qualification for instructors in schools for the deaf and for training centers for teachers of the deaf.

The following list of names of applicants supplements the lists previously reported in the ANNALS, the complete total now being 202.

Anderson, Olga, North Dakota School
Bailey, Ruth, Illinois School
Bellhorn, Walter, Evangelical Lutheran Institute
Breakey, Margaret R., Illinois School
Bunnell, Demma E., Oregon School

Cobb, Florence M., Illinois School
Daniels, Margaret E., Kendall School
Deem, Hattie L., Gallaudet School
Doctor, Powrie V., Gallaudet College
Dunn, Ruth J., Texas School
Eastman, Mrs. O. L., Texas School
Elmer, Leslie A., Tennessee School
Ervin, Jean C., North Carolina School
Grosvenor, Flora N., Rochester School
Hall, Tommy L., Oklahoma School
Hansen, Hans P., New Jersey School
Hilliard, Ethel M., New Jersey School
Hofsteater, Ollie T., Alabama School
Hopper, Eunice, Illinois School
Jannopoulo, Carrie M., Illinois School
Johnson, J. Lewis, New Jersey School
Kitchens, Myra B., Texas School
Lang, Edith M., Michigan School
Leeper, Ferol M. S., Illinois School
Miller, Gertrude C., Kansas School
Miller, Linda K., Beidler School, Chicago
Morgan, Virginia, Illinois School
Murphy, Kenneth, New Jersey School
Paulson, Cora H., Maryland School
Peterson, Peter N., Minnesota School
Pharis, Dorothy M., Minneapolis, Minn.
Pilon, Ione L., Michigan School
Rice, Stanley F., Parker Practice School
Rives, Robert M., Texas School
Scyster, Margaret K., Illinois School
Sterck, Emily E., Arizona School
Stewart, Ellen P., Kendall School
Traylor, William C., Iowa School
Washington, Josephine, Kansas School
Weyerman, Charles, Texas School
Wolke, Mary E., Illinois School
Wood, Mary D., Gallaudet School
Woodburn, Elizabeth H., Arizona School
Young, Irene B., Glen Ridge, N. J.

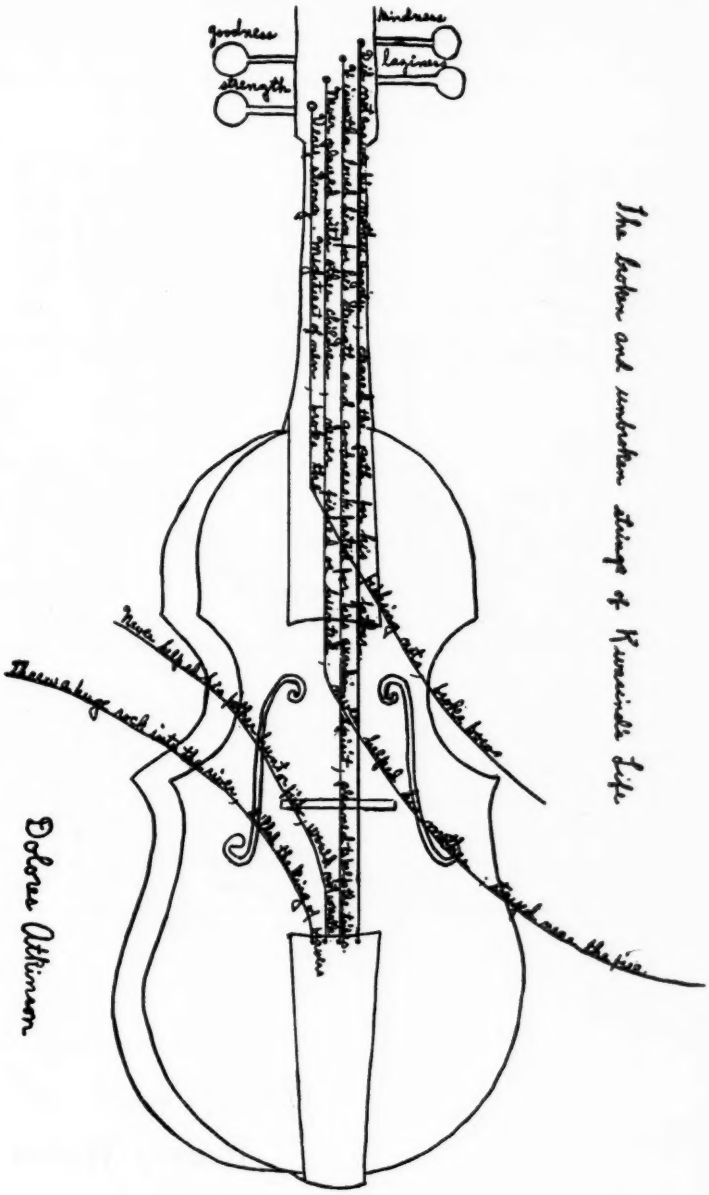
CHART WORK IN READING

The advantage of chart construction in connection with the reading lesson is twofold. It calls for thoughtful reading and develops the imagination. The psychological effect of getting out of the humdrum in class activity is good.

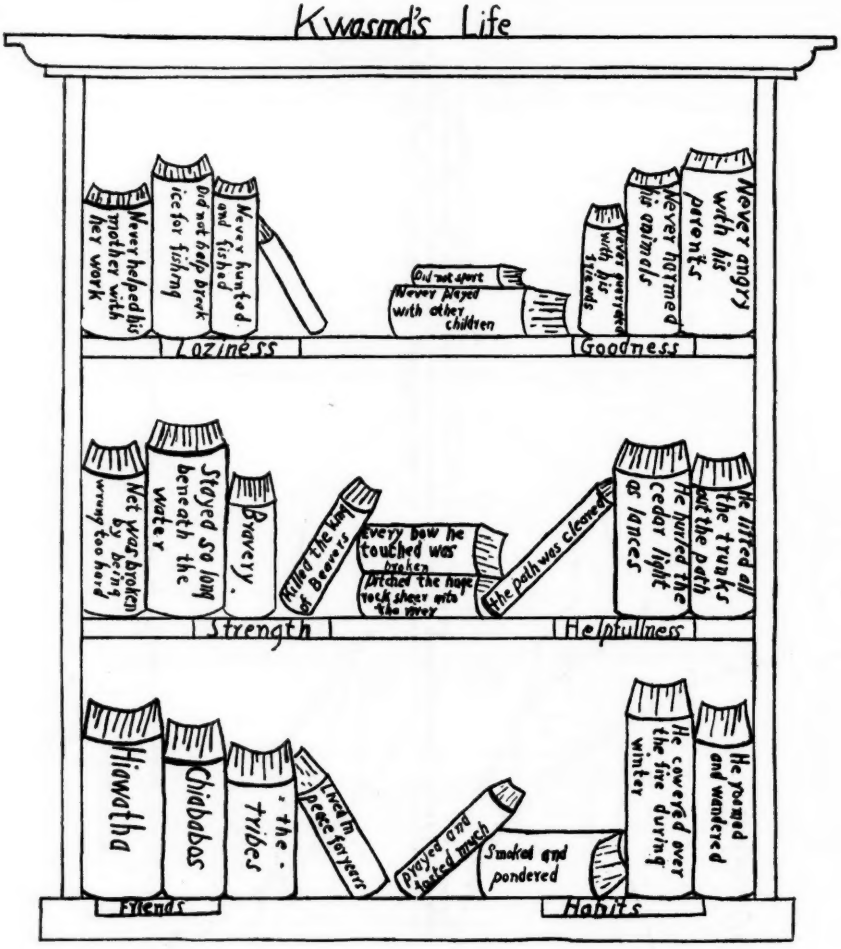
Charts based on a subject taken from Longfellow's "Hiawatha"—the description of Kwasind, the strong man, the friend of Hiawatha—will illustrate. One pupil treated the chart as a tree and one as a bean stalk (climbing, she said, to Kwasind's manhood). In these latter two cases, the roots were Strength, Goodness, Might, Laziness and Dreaminess. The first impulse of the teacher was to cross out Laziness and Dreaminess; then the thought occurred that weakness in the roots would make the growth of the tree suffer and that here was a chance to get a fine reaction on character growth.

Another pupil had the very good idea of using a bookcase. But on a shelf marked Helpfulness he put books marked "He never hunted." He was advised to make another case with more sections, putting helpful things in the helpful section, lazy things in the lazy section, etc. The result was good.

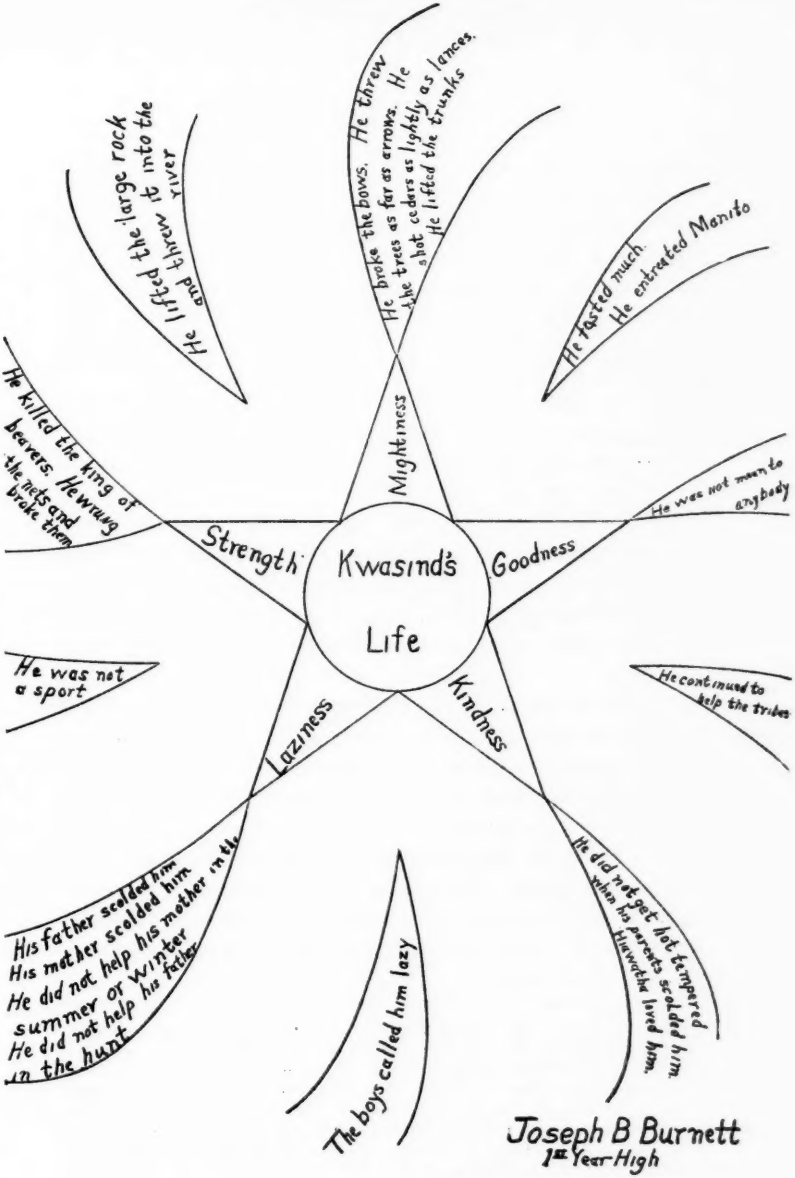
The drawings that follow are illustrations of what may be done along the line of chart work as an aid to visualization, imagination and organized thought.



The bottom and unbroken strings of Kwasind's life


Kwasind's Life
Never angry with his parents
Never harmed his animals
Never quarreled with his sisters
Did not sport
Never played with other children
Never helped his mother with her work
Did not help break ice for fishing
Never hunted and fished
Laziness
Goodness
He lifted all the trunks out the path
He paved the cedar light as lances
The path was cleared
Every bow he touched was broken
Ditched the hope rock sheer with the river
Killed the king of Beavers
Bravery.
Stayed so long beneath the water
Wet was broken by being wrung too hard
Strength
Helpfullness
He yearned and wandered
He covered over the fire during winter
Smoked and pondered
Prayed and fasted much
Lived in peace for years
Hiawatha
Chibabos
The tribes
Friends
Habits

Afton Curtis and
Rodney Walker


Kwasind's Life
Strength
Goodness
Laziness
Kindness
Mightiness
He broke the bows. He threw the trees as far as arrows. He shot cedars as lightly as lances. He lifted the trunks
He lifted the large rock and threw it into the river
He killed the king of beavers. He wrung the nets and broke them
He fasted much. He entreated Manito
He was not mean to anybody
He was not a sport
He continued to help the tribes
His father scolded him. His mother scolded him. He did not help his mother in the summer or Winter He did not help his father in the hunt
The boys called him lazy
He did not get hot tempered when his parents scolded him. Hiawatha loved him.

Joseph B Burnett
1st Year High

FANNIE DAY HURST,
Instructor in the Utah School,
Ogden, Utah.

ISOLATION AMONG MANY A BARRIER[1]

High thoughts and noble in all lands
Help me; my soul is fed by such.
But ah, the touch of lips and hands,—
The human touch!
Warm, vital, close, life's symbols dear,—
These need I most, and now, and here.
—RICHARD BURTON.

Unlimited opportunities for obtaining higher education are offered by the colleges and universities of the land. Deaf students and deaf teachers are urged to take advantage of the opportunities. The benefits that can be derived from attendance at such institutions are well known. We shall not discuss them here. But let us consider one obstacle which the deaf person must meet when he is a student in a common college or university.

This obstacle is isolation. Only the deaf person who has attended school side by side with hearing people really understands what this isolation is and means. People who are not deaf can not imagine the penetrating isolation a deaf person often experiences when he is the only deaf person in a group. This depressing feeling is heaviest when he is in a group of strangers. It is present because he lacks a means of easy communication with his fellow men, in the college classroom and elsewhere.

In the modern college, lecture courses predominate. After a lecture the class often has an open forum discussion, for the professor's remarks generally embrace a great deal of illustrative subject matter gleaned from outside the regular textbooks. Such discussions within and without the classroom are a powerful aid in fixing things in the mind. They help students retain new knowledge. It is a common observation that through informal discussion of fresh information that information thus becomes one's own.

[1]The writer of this article has the following educational record: 1. Completion of the eighth grade in the Iowa public schools; 2. Two and one-third years of high school work in the preparatory department of Luther College, Decorah, Iowa; compelled to withdraw because of increasing deafness; 3. Out of school three years; 4. Graduation from the Iowa School for the Deaf; 5. Graduation from Gallaudet College with the degree of Bachelor of Arts; 6. Summer session, Colorado State Teachers College at Greeley.—*Editor*, ANNALS.

Granting the value of discussions, let us ask how the deaf student can take part in them and profit by them. He usually can not. That is a cold fact. He can rarely take active part in the discussions or profit by them either within or without the classrooms except with great annoyance to fellow students, and usually at much sacrifice on their part. Most deaf students resent "sponging" around, transcribing the notes of other students. They do not like being "copy-cats."

As a possible remedy the suggestion might be made that the deaf student study his textbooks thoroughly and get the required information himself. But will the remedy work? At best books lack the human touch. Then, too, not every person learns best through reading alone. Most of us learn most easily when we can share our knowledge with others. Reactions to new things are freely exchanged within a gathering of students. Each remark acts as a stimulus. Or, expressing this point in a graphic way, we may say that each student has a mental camera and takes a snapshot from his own angle. Then by passing the pictures around each member in the group gets the privilege of seeing as many views as there are photographers. Now suppose there is a deaf student in the group; what does he see? Unless he is a prodigy or is very forward and bluntly approaches his fellow students for details, he sees only his own picture, and it is apt to be a clouded picture at that.

The deaf student finds that he is thrown almost wholly upon his own resources. His own opinions and those of the authors of his textbooks are about all he can go by. He must go about alone searching for knowledge as a prospector in the mountains searching for gold. Of course there are individuals who do not mind this independent method, just as there are men who find the solitary existence of a prospector to their liking. The normal person prefers and seeks company.

Lip-reading might be put forth as another possible remedy, but to the majority of the deaf lip-reading very seldom is of much help among strangers. It is largely

played up by theorists. Luck and guesswork are factors frequently entering here. Successful speech-reading depends at least fifty per cent on the speaking behavior of the person whom the speech-reader must understand. Those who are familiar with the deaf know this and speak clearly for their benefit. The large majority of people never give any thought to lip-movement and as a result, they have very little speech that is intelligible to the average lip-reader. College professors have large vocabularies and use a vast number of specific words not used by people in general and which therefore are stumbling blocks to any but the most extraordinary speech-reader. And the speech-reader has only one chance to get what is spoken; he can't ask for repetitions of sentences as he did while a pupil in a school for the deaf.

The factor of luck also enters in the choice of professors. A student may occasionally be so fortunate as to take a subject under a professor who speaks with sufficient lip-movement to be understandable. As a rule the deaf student is not acquainted with the professors and consequently he can not knowingly select studies under professors who speak plainly enough. He must trust to blind chance. Even if he should happen to make a good choice now and then, where would his speech-reading abilities help him when the class has one of its frequent round-table discussions? In such circumstances it would be utterly impossible for him to follow the interchange of remarks.

We have it pointed out as an example to the deaf student how the blind are going through colleges in spite of all obstacles. This is not a fair comparison, for the blind are able to get all the classroom lectures, and to take an active part in all student discussions, round-table talks, literary society programs, evening lectures, all campus talk. They are handicapped solely in the library and in research work, and in this a paid "reader" is provided. No blind student thinks of trying to get through college on what he can mooch from roommates

or picked-up temporary help in the way of a reader's services.

Why are deaf students in a college for the hearing expected to get unaided through the eye that which they can not hear, when the blind are relieved of the necessity of trying to get unaided through the sense of hearing all that they can not see? It seems to be the popular belief that because of the fact that the deaf do not need aid in walking about they don't need aid in any other way. Blindness and deafness are distinctly different afflictions, each severe in its own way, each an impairment or loss of one of the senses.

It is a fact, however unpleasant it is to admit it, that the deaf student in a college for the hearing is often as good as helpless. Sometimes the only thing he can do throughout an entire class period is to smile and try to look intelligent. Often his isolation there among many is as intense as if he were lost in a great forest. It is the bitterest kind of isolation a man can know.

The foregoing remarks are not based on fancy. They are not made with a view of discouraging deaf people who have thought of continuing their education in one of the state colleges. No matter what college a person may enter he will be benefitted, just as anyone of sound mind is bound to learn from changed environment and new contacts. But the wise person will select his college with care.

Gallaudet College is the only college in which the deaf student is able to escape from this "isolation among many." In this college all the students are deaf (excepting the Normal Fellows). They speak a common language. They study under professors especially trained to teach the deaf and who for that very reason undoubtedly understand better than any other group of educators in the world to-day the problems of the deaf, educationally, socially, spiritually and vocationally. Gallaudet students can discuss anything on a level footing. Each student is on equal terms with the rest of the students whether in school, on the campus, at social gatherings, or in

athletic circles. This is a big thing. It is a big thing that should be kept in mind by any young deaf person planning on a college career. The personal touch that Gallaudet provides is priceless.

The isolation barrier aside, it is true that the majority of colleges offer greater inducements than Gallaudet along strictly educational lines. They have broader courses and better facilities. But let us not forget the isolation barrier. It is very important.

A deaf person desiring to go to a common college ought not go alone. He should take with him a deaf friend or two so that they, at least, can discuss their studies together. It stands to reason that two or three would profit more than one, in an educational way, and they would have a far more enjoyable time going together than they possibly could have if they attended college singly.

The problem of isolation and loneliness also looms up before the deaf teacher desiring to improve himself by summer attendance at state colleges, but it is not so acute with him, an older, more experienced person, as it is with a youth fresh from a residential school for the deaf. Just the same, the deaf teacher should take along a deaf friend, preferably a fellow teacher. The ideal arrangement would be for both to take the same subjects. They should get the most that way. If the teacher is a married man, he might arrange to have his wife join with him in his studies. With company the journey is easier and the day shorter.

A word in defense of people in our universities and colleges is in order before closing. Let no one get the impression that these people deliberately shove the deaf aside or purposely do not give them the special attention they need. Most professors are kind-hearted and sympathetic. They would generally help more than they do, but they can not because they are not familiar with the deaf type of student and also because they owe their time to the class as a whole; they can not fairly favor any individual in it. As for the students, they associate by following natural tendencies. People who hear naturally

group together. Individuals who can't hear are automatically disqualified, and they as naturally form a group of their own. It is safe to say that the deaf are not left out through any feeling of contempt or other failing of human nature on the part of hearing people but simply through the natural impulse for like to group with like.

NORMAN G. SCARVIE,
Instructor in the Iowa School,
Council Bluffs, Iowa.

SUBJECT-MATTER PLAN OF TEACHING HISTORY

How should a teacher present the study of any subject so that the pupils may gain a system of how to study, not merely learn the subject matter in one book during a school year? It is a tremendous proposition to train our boys and girls to become students with a definite plan of analyzing the subject-matter of a line of study and apply the same principle to other lines of study. It has often been stated that the schools were intended to train our young folks to become independent thinkers. To accomplish that the teachers will have to train these immature minds into some system of thinking.

The majority of us older people studied every subject just one way. We used one textbook in each subject, taking for granted that the author was encyclopaedic in his range of information and had presented the subject thoroughly and accurately. The strange thing is that different authors vary in their lines of reasoning. Which one did we accept as right? We accepted the opinions of the writer whose book we studied. What questions did we answer? Those given in the textbook? Certainly. But, did we learn any definite system of studying the subject? No. We just studied page by page, till we learned the whole book.

To-day there are several systems of getting pupils to know how to study. That is the real art of teaching and a very difficult art to instill in boys and girls. Among these systems we find the Dalton Plan, the Morrison

Mastery of Technique Plan, the Buckner Subject-Matter Plan. The presentation that follows is based on the Subject-Matter Plan in American History. The scheme works out somewhat like this.

American History may be broken up into several important periods, as follows:

A. European Trade in the Orient up to the Time of Columbus.
B. Explorations in the New World.
C. English Colonization in America and The Struggle to Dominate America.
D. The American Revolution and Setting up the United States Government.
E. The First Thirty-five Years of the United States.
F. The Westward Movement.
G. Problems of Slavery and Holding the Union Intact.
H. Industrial Expansion.
I. Growing into a World Power.

The class should be made to realize that it is not studying one page after another of a textbook. It should feel it has the problems of living to analyze and that it is to work out a moving picture of bygone days, the foundations of our life to-day. A fact to remember is that pupils are immature and do not keep in mind the teacher's viewpoint unless she keeps that attitude constantly before them.

Let us present to the class a period, say, The Westward Movement. It breaks into four parts: (1) To the Mississippi, (2) To the Rockies, (3) To Texas, (4) To the Pacific. The teacher has a great deal of work to do to plan the material so as to present the method of study in every period the same way. If this method is presented year after year for three or four years so that it becomes a fixed habit, then the pupils have gained more than a study of history. They will have a plan of knowing how to read history for themselves if they decide to go on to senior high school and college. The hope is that in college they will find teachers who use some definite system of study.

The presentation consists of the following steps:

1. Relate an Overview, like a tourist advertisement giving the high spots of what one will see on the tour.
2. Give the class a sample of the History Calendar covering the period under discussion.
3. Give a pre-test based on the Overview and History Calendar to see how much the class has grasped in a general way.
4. Give the class the book assignments for reading to discover more details of the various incidents recorded in the history texts. If they are on hand, use several texts.
5. Give the class your idea of how to study the assignment which may cover several days, not certain pages. The scheme of study includes three levels for individual abilities,—the minimum requirements for the whole class; the average requirements that all can get if they work up to par; the maximum assignment for the more capable pupils. To meet this last, give them a list of books which they may get from the school or city library. History fiction makes the short textbook remarks live as realities.
6. For Notebook work let them discover and write brief notes (words or phrases, not sentences) along the lines of the following topics. This is the key of the Subject-Matter Plan.

I. Leaders
II. Peoples
III. Lands and Resources
IV. Industries and Trade
V. Transportation and Communication
VI. Government
VII. Finance
VIII. Foreign Affairs
IX. Military Affairs
X. Social Progress

1. Education
2. Religion
3. Homes and home life
4. Labor: workmen and labor problems
5. Wealth and poverty
6. Lawlessness and penalties of crime
7. Amusements; Social life
8. Medical attention; Prevention of disease.
9. Everyday citizenship

This key to study should be keep on a chart where the pupils can see it constantly to check down the list of topics about which they are expected to know something. Let the pupils realize this is a definite ever changing game such as football or basket ball where the ball is passed back and forth so that finally one player succeeds in making a goal and scores. So these varying combinations of leaders, people, industries, trade, wars, money matters, etc., finally score some goals, which we may call national power or loss of power, growing world leadership, land expansion, and other factors.

After each subtopic the teacher should check up the fullness and thoroughness of the pupils' fund of information with a test.

In order to give a fuller comprehension of the subject, the teacher will have to diverge from teaching history to coaching the class on vocabulary work, dividing the words into classes, such as government and political terms, business terms, military terms, and so on.

Another means of clarifying the story is by illustrations: Mounted pictures along various lines indicated in the key, a good movie film, maps, stereographs, cartoons, illustrated maps.

To make this discussion clearer and more definite to some who have not come in contact with the newer methods now advocated in the universities, there follows a plan of procedure to illustrate how the period, The Westward Movement, may be treated.

THE WESTWARD MOVEMENT

Overview

Up to the beginning of the Revolutionary War we have been learning what American life looked like along the Atlantic Coast. The country west of the Alleghenies had come into British possession just a dozen years before. We should remember how the French had exploited the Ohio country by their fur trade for half a century.

Now we must watch the American movement westward. In fifteen years 200,000 people surged west across the

Allegheny Mountains. Twenty years later, in 1810, there were 1,600,000 white people in the new West. Four new states, had been added to the Original Thirteen. The "War Hawks," the Congressmen from the New West and Southwest, urged the second war against England.

Henry Clay's American System was the beginning of improving land and water ways for travel and commerce.

The frontier faced west toward the wide, open spaces beyond the Indian lands. Wars broke out again and again, resulting in safer white settlements and advancing the frontier line.

The Louisiana Purchase, the annexation of Texas and Oregon, the purchase of the Southwest, stretched the young American territory 3,000 miles west to the Pacific within seventy-five years after the Declaration of Independence.

The urge of wealth, from cotton, grain, cattle, sheep and gold, caused wave after wave of emigrants to brave the western trails.

By 1850 there were fifteen new western states. The population was six times greater than it had been in the Revolutionary days.

Many new problems of daily social life, varied industries, commerce, transportation, communication, finance, and government were met by the people and solved.

The romance and color of wild adventure, exploring new lands, fighting Indians, hunting buffaloes, driving great herds of cattle, prospecting for gold, gun law, and law and order thrilled thousands into going west.

We want to read and feel the thrill of life in these bygone days and study the problems they met. Some of these problems are not entirely answered yet. People are still moving west. Over 2,000,000 people moved to California between 1920 and 1930.

CALENDAR OF EVENTS

Date	Event	New States	Area Population
1775	Boone led pioneers into Kentucky		

Date	Event	New States	Area Population
1780	Frontier movement westward began		
1785			
1790	200,000 population west of mountains		827,000
			3,929,000
		Kentucky	
	Defeat of Indians by Gen. Wayne		
1795	Trouble with Spain about trade		
	Use of New Orleans port	Tennessee	
	Stagecoach to Pittsburgh 20 days		
1800			2,000,000
			5,300,000
	Louisiana Purchase	Ohio	
	Lewis and Clark Expedition to Oregon		
1805	Pike Expedition to Colorado, New Mexico		
	Cumberland wagon road. See 1820		
	Fulton invented first steamboat		
1810			2,000,000
	Astoria, Oregon		7,240,000
	Steamboats on Ohio and Mississippi	Louisiana	
	$8,000,000 freight to New Orleans		
	1,600,000 population in West		
1815	Wave of western migration		
	Clay's American System in Congress	Indiana	
		Mississippi	
		Illinois	
	Panic of 1819	Alabama	
1820	National road to Illinois		2,059,000
		Missouri	7,600,000
1825	Erie Canal completed		
	Philadelphia to Pittsburgh Boat Wagon		
	Settling Texas		
1830	First Railroad, B & O		2,059,000
	McCormick's grain reaper		13,000,000

Date	Event	New States	Area Population
1835	Santa Fe Trail		
	End of Texas Revolution	Arkansas	
	Panic of 1837	Michigan	
1840	First telegraph line		2,059,000
	Railroad, Boston to Buffalo		17,000,000
	Whitman Expedition to Oregon		
1845	Texas annexed	Florida, Texas	
	Oregon Trail	Iowa	
	Mormon trek to Utah		
	End of Mexican War	Wisconsin	
	Annexed Southwest		
1850	California Gold Rush	California	2,980,000
			23,000,000
	Railroad to St. Louis and Chicago		
1855			
		Minnesota	
		Oregon	
1860	Pony Express to California		3,025,000
		Kansas	31,500,000
		West Virginia	
		Nevada	
1865			
	Alaska Purchase	Nebraska	
	Union Pacific R. R. completed		
1870			3,600,000
			38,500,000

PRE-TEST—UNIT I—TO THE MISSISSIPPI

I Fill in on an outline map, printing all names neatly:

(a) The Appalachian Mountains.

(b) Hudson River.

(c) Mohawk Valley.

(d) Erie canal.

(e) Great Lakes and ports.

(f) Ports on Ohio and Mississippi Rivers.

(g) B. & O. Railroad main lines.

II Check among these books those you have read:

Cardigan	Betty Zane	The Last Trail
Drums	The Virginia Scout	
Daniel Boone		

III Find a table of dates when the states in this period were admitted. On the outline map mark the Thirteen Original States, 1776. Mark the states admitted between 1790 and 1810 by the years when they were admitted.

IV Study the Calendar of Events and check the following. Mark R or W for right or wrong statements.

1. Only a few hundred people migrated west across the Alleghenies between 1785 and 1800. R W
2. People left the eastern states because of religious persecutions. R W
3. People went west because the farm soil along the coast was too sandy and not fertile. R W
4. The eastern people were willing to give up the comforts of life in the East. R W
5. The emigrants figured they could gain more wealth in the wild West even if transportation was poor. R W
6. The Indians in the West made no more trouble after the defeat of Pontiac after the French and Indian War (1755-1763). R W
7. The easiest trail east from Kentucky to the Atlantic coast was through Pennsylvania. R W
8. The Spanish in New Orleans refused to let the Americans from the Ohio Valley sell their goods there. R W
9. Most of the easterners followed the trail west through the Mohawk Valley. R W

REFERENCE ASSIGNMENTS

UNIT I. Moving the frontier to the Mississippi.

UNIT II. West to the Rockies.

UNIT III. Texas.

UNIT IV. West to the Pacific:
1. The Oregon Trail.
2. The Santa Fe Trail.
3. Direct West to California.

TEXTS	UNIT I	UNIT II	III-IV
Beard & Bagley (1926)	90-91. 162-163 175, 205	205-215	274-286
Bourne & Benton	121-125, 177-178 198-200, 213	229-238, 278	306-319
Burnham	182-194, 308-314	221-230, 250-251	356-361
Fite	169-171, 126-127 145-147	213-217, 254-255	310-322
Gordy	91-92, 162-163 177-178	206-215, 235-236	286-295
Guitteau	113-114, 189-191 212-216	257-262, 306-307	353-370
Leonard & Jacobs	136-138, 179-180 192-195, 225-227	242-246, 263-264	300-310
Long	135-136, 197-198 213-215	248-251, 279-281	313-327
Mace Bogardus	221-222, 244-247 317-319	293-298, 332-333	382-393
Montgomery	117-119, 163 172-173, 183	193-195, 210-211	250-258
Robbins	91-93, 146-147 160, 216-219	182-189	267-278
West & West	182-183, 214-220 283-291	242-248	343-351

ADDITIONAL REFERENCES

UNIT I.

Hart	How Our Grandfathers Lived
Nida	Following the Frontier
Roosevelt	Winning the West
Sparks	Expansion of the American People
	Daniel Boone
	George Rogers Clark
Boyd	Drums

Curtis	Indian Days of Long Ago
Grey	Betty Zane
Grey	The Last Trail
Johnston	The Great Valley
Thompson	Alice of Old Vincennes
Chambers	Cardigan
	The Virginia Scout

UNIT II.

Burnham	Hero Tales from History
Davidson	Founders and Builders of Our Nation
Gordy	Leaders in Making America
Logie	From Columbus to Lincoln
Woodburn & Moran	Makers of America
Earle	Stagecoach and Tavern Days
Eggleston	Hoosier Schoolmaster
Shaw	Story of a Pioneer
Taber	Breaking Sod on the Prairies

UNIT III.

Hall	Half Hours in Southern History
Sparks	Expansion of the American People
Barr	Remember the Alamo
Gillett	The Texas Ranger
McNeill	In Texas with Davy Crockett

UNIT IV.

Hough	Passing of the Frontier
McMurray	Pioneers of the Rocky Mountains and the West
Paxson	Last American Frontier
Roosevelt	Stories of the Great West
Sexton	Stories of California
Turner	Rise of the New West
	Fremont
Hough	North to 36°
	54° 40′ or Fight.

Hooker	The Bullwhacker
Hough	The Covered Wagon
Jackson	Ramona
McConnell, Driggs	Frontier Law
Meeker, Driggs	Ox-team Days on the Oregon Trail
Morrow	We Must March
Parkman	Oregon Trail
Russell, Driggs	Hidden Heroes of the Rockies

ASSIMILATION STUDY: UNIT I—TO THE MISSISSIPPI

Minimum Essentials

1. Read the reference assignment for Unit I in the textbooks. Read fast, skip hard words, get the main idea of the story.
2. Read the story a second time. Keep your notebook open to the HISTORY FACTORS. Make notes of points under each factor.
3. Study the map of the United States. See what your Geography tells you about the natural resources of those states, the routes of travel by land and water. Fill in an outline map.
4. Make a list of hard words for your VOCABULARY BOOK. Hand them to your teacher. Give author of book you read and pages where you found the words.
5. Make an OUTLINE from your textbook using the boldfaced headings for main topics (1-2-3-4) and pick out the a b c d details from the paragraphs.
6. Add other important men or events to Calendar of Events.
7. Write a short summary of the chief points of the unit.

Average Requirement

8. Read in Hill's Community Life and Civic Problems, pp. 114-122, An American Frontier Community. Write a short report about it.
9. Make a class scrapbook of pictures, maps, etc., to illustrate this unit.

Maximum Essentials

10. Read two of the history fiction stories listed under Unit I. Write a report about each book as follows:
    Author and name of book.
    Time of history told in the story.
    Chief heroes. What each one did.
    Where the story was located.
    Five main events that happened.
    Your name.

PRE-TEST—UNIT II—TO THE ROCKIES

1. In a textbook find the table of dates when the states in this period were admitted to the Union. Mark on an outline map the new states west of the Mississippi admitted from 1819 to 1840.
2. Traffic through New York State from 1825 on was made easier by good macadamized roads—a canal across the state, the new Albany-Buffalo railroad. (Underscore.)
3. The American System means the American plan of free public schools—improved roads at government expense—government by a republic. (Underline right answer.)
4. The United States census is taken every 5-10-15-20 years.
5. The second steamboat in the world was made in Pittsburgh, Pa. Check True False.
6. Eli Whitney invented the ———— in 1793.
   McCormick made the first ———— in 1831.
7. Southern farmers moved west to these states: ————, ———— and ————.
8. Southern farmers moved west to raise larger farms of wheat, corn, cotton, tobacco, cattle.
9. The labor problem was solved in the South by getting cheap Chinese workmen — getting European immigrants—white men doing the work themselves—using Indians—using colored slaves.
10. The labor problem in the north was solved by (See 9) ————————————————.

11. The population in 1840 was 2 3 4 5 times as many as in 1790.
12. In ten years from 1830 to 1840 the railroads grew from 15 miles to 100-200-300-400-500 miles.
13. The country west of the Mississippi was explored by Daniel Boone, George Clark, William Clark, Lewis, Zebulun Pike, Kit Carson. (Underscore two.)
14. There were over 60,000 people in each of three new states west of the Mississippi by 1835: ————, ————, ————.

ASSIMILATION STUDY: UNIT II—TO THE ROCKIES

Minimum Essentials

1. Read the reference assignment for Unit II. Practise reading fast to get the gist of the story.
2. Make up notes based on HISTORY FACTORS.
3. Fill in an outline map to illustrate Unit II.
4. List vocabulary of hard words.
5. Add new data you find to the Calendar of Events.
6. Outline Unit II.
7. Write a short summary of the unit.

Average Requirement

8. Read Marshall's Story of Human Progress, pp. 381-389. Write a report about it.
9. Add illustrations to the class scrapbook.

Maximum Essentials

10. Read two fiction books, listed under Unit II, about men who explored the country west to the Rockies. Write a brief report as follows:
    Author and name of book.
    Time of history told in the story.
    Chief heroes. What each did.
    Where the place was located. Show by map.
    Five main events that happened.
    Your name.

PRE-TEST—UNIT III—TEXAS

1. On an outline map of North America color in the

Mexican, American, British and Indian lands in 1830.
2. Did Northerners or Southerners migrate into Mexico?
3. The Mexicans welcomed the coming of the Anglo-Saxon Americans. Right Wrong.
4. I have read these books about Texas:
5. The Americans in Texas agreed to the Mexican demand to give up all their guns. Right Wrong.
6. "Remember the Alamo," means to avenge the death of the Americans killed in the church mission in San Antonio—not to forget the old home church in San Antonio—to get everybody to go to church at the Alamo mission.
7. From 1836 to 1845 Texas was a Mexican State, a free independent nation, a territory of the United States.
8. We think of Texas to-day as a cotton, corn, cattle, sheep, oil, gold producing state. (Underscore.)
9. The troubles between the United States and Mexico about Texas were ended by cattle raids across the Rio Grande border—by a war—by a meeting of government leaders to arbitrate the dispute.
10. Texas in area was rather small—as big as Pennsylvania—as big as the 13 Original States.
11. On an outline map of the United States color the Atlantic Coast states red, leave the land from the Alleghenies to the Mississippi white, color the Louisiana Purchase blue, the territory taken from Mexico yellow, the Oregon country green. Make a key explaining the colors.

ASSIMILATION STUDY: UNIT III—TEXAS

Minimum Essentials

1. Read reference assignments for Unit III. Don't try to learn the first time you read. Read fast to get the main ideas of the story.
2. Make notes in your notebook based on History Factors.
3. Sketch in on an outline map the events of this unit.
4. Add new words to your vocabulary.

5. Add new events or leading men to the Calendar of Events.
6. Outline the story of this unit.
7. Write a short summary of Unit III.

Average Requirement

8. Read Hill's Community Life and Civic Problems, pp. 381-389, about How Communication and Transportation Developed.
9. Add pictures and maps to the class scrapbook.

Maximum Essentials

10. Read two history fiction books about the early days in Texas. See list of books under Unit III. Write reports as follows:
    Author and name of book.
    Time of history told in the story.
    Chief heroes. What they did.
    Where the story was located. Show by map.
    Five main points that happened.
    Your name.

ASSIMILATION STUDY: UNIT IV—TO THE PACIFIC

1. On an outline map of North America trace in blue the Ohio, Mississippi, Missouri and Columbia Rivers.
2. Draw a red line along the 49th latitude from Lake Superior to the end of the Louisiana Purchase.
3. Draw black dotted lines along latitudes 54° 40′ and 44° 50.′
4. Draw a dotted black line from Kansas City to the mouth of the Columbia to show the route Lewis and Clark followed.
5. Examine a map of the Union Pacific R. R. and draw a dotted line to show the route taken by the "Forty-Niners" and Pony Express Riders.
6. Check any of these books you have read:

Roosevelt	Stories of the Great West
Hough	North of 36
Hough	54° 40′ or Fight

Hough — The Covered Wagon
McMurray — Pioneers of the Rocky Mountains and the West
Paxson — Last American Frontier

7. Thousands of men went to California on the Gold Rush in 1849 by way of: (Check.)
   (a) The Union Pacific railroad.
   (b) The overland route straight west.
   (c) The Santa Fe trail through New Mexico.
   (d) The ocean route around Cape Horn.
   (e) The ocean route through Panama Canal.
   (f) The ocean route across Panama.
8. During this period, 1803-1850, the United States fought the War of ———— and the War with ————.
9. One of the frontiersmen in the middle west, ———— ————, became President of our country.
10. Motion pictures often show scenes of events 50 to 75 years ago such as, cowboys fighting with guns, Indian life in the West, scenes in the National Parks, Hollywood.

ASSIMILATION STUDY: UNIT IV—TO THE PACIFIC

Minimum Essentials

1. Read the reference assignment for Unit IV.
2. Make notes about the facts in your notebook.
3. Fill in an outline map giving the routes of travel and events in the Far West.
4. Add hard words to your vocabulary.
5. Add events and leaders to the Calendar of Events.
6. Make an outline from your textbook about Unit IV.
7. Write a short summary of this unit.

Average Requirement

8. From your Geography, texts, Book of Knowledge, World Book, Comptom's Pictured Encyclopaedia, find out and write a paragraph about each of the following topics:

   Irrigation in the Far West.

National Parks in the Far West.

9. Add pictures and maps to illustrate the unit.

Maximum Essentials

10. Read two of the history fiction books listed under Unit IV. Write a summary of the books as follows:
    Author and name of book.
    Time in history of the story.
    Chief heroes and what each did.
    Location of the story. Show by map.
    Five main points that happened.
    Your name.

FINAL TEST—UNITS I, II, III, IV—THE WESTWARD MOVEMENT

PUPILS: Before you answer the following test, first mark a K on the left side for questions you know, D for those you are doubtful about, and N for those you do not know. If you find a number of D's and N's, study some more before you do the test. It pays to K-N-O-W the first time up.

I. GENERAL

1. The Westward Movement has been going on for centuries, 1500 to 1735.
    a. Thousands of people migrated west to America from Italy, Spain, France, Holland, Germany, England, Sweden. (Underline.)
    b. The American settlers later moved west after 1775 as far as:
        (1) The ———— Mountains.
        (2) The ———— River.
        (3) The State of ————.
        (4) The ———— Coast.
2. People migrated because: (Check.)
    a. They wanted a life of adventure.
    b. They had a hard time making a living where they were.
    c. They expected to get rich quick finding gold.
3. The big problem to-day is the question of: (Check.)
    a. Immigration from Europe.

b. Danger of another world war.
c. Too big a population in America.

4. The problem of more immigrants affects the other problem of: (Check.)
   a. Raising food enough for more millions of people.
   b. Finding work enough for more millions of men.
   c. Americanizing the new immigrants.
   d. Keeping the work we have for Americans only.
5. The Americanizing of European immigrants means:
   a. Teaching foreigners to use the ———— language.
   b. Changing to the American standard of ————.
   c. Really ———— the American laws.

II. Transportation and Communication

6. The early pioneer roads were along good wagon roads, auto highways, Indian trails, streams, railroads. (Underscore.)
7. When the frontiersman wanted to buy supplies he had to: (Check.)
   a. Walk down to the village store and get them.
   b. Drive two or three miles to town.
   c. Ride 25 to 50 miles to a settlement and carry the goods home on horseback.
8. Before railroads came in 1830, easy transportation of goods was facilitated by: (Check.)
   a. Driving anywhere across country.
   b. Building numerous crossroads such as we have now.
   c. Digging canals to join rivers and lakes.
9. It used to take twenty hours—days—weeks to drive from Philadelphia to Pittsburgh.
10. Travel became better after 1830 when airplanes—motor boats—automobiles—trains were used.
11. Twenty years after 1830 people could travel by railroad as far west as Pittsburgh—Cincinnati—Chicago—St. Louis—Kansas City—Denver.
12. The freight from the farms in the Ohio Valley was shipped: (Check.)

a. East to New York by wagons.
b. South down the Mississippi to New Orleans.
c. East on the lakes to Quebec.

13. Henry Clay's American System was a plan for (Underscore) the people themselves—the States—Congress—to finance the work of building new roads west.
14. To make the rivers deep enough for steamboats all the year round the United States has raised the water in the Ohio, Allegheny and Monongahela Rivers by building (Underscore) bridges—locks and dams—steamboat landings.
15. The automobile highways to-day are financed by (Underline) Congress—State legislatures—the counties.
16. Now we can send a letter to California by train in (time) ————, or by airmail in (time) ————.
17. Buffalo Bill Cody used to be a mail rider called a ———— ———— rider.
18. The East and Far West are now bound together by thousands of miles of ————, ————, and ————.
19. Now we can talk back and forth with the Far West by ————, ————, or by ————.

III. Leaders

20. A number of early leaders in the Westward Movement were (Check) who figured in the following events: (Check by letter.)

a. Washington.	h. Jackson.
b. Boone.	i. Jas. J. Hill.
c. Calhoun.	j. Lincoln.
d. Clay.	k. Marcus Whitman.
e. Houston.	l. Fremont.
f. Franklin.	m. Samuel Adams.
g. Crockett.	n. Jn. Jacob Astor.

— favored purchasing Louisiana.
— led 1,000 settlers to Oregon.
— led the Texas revolution.
— fought the Indians in Florida.

— led the Americans in California.
— led the settlers in the Ohio Valley.
— built the Northern Pacific R. R.
— advocated good roads west.
— was in the fight in the Alamo.
— signed the bill for the Union Pacific R. R.

21. ———— was President when Texas was annexed.
22. The figures of Presidents ————, ————, and ———— are being carved in the lofty rock mountain in the Black Hills of South Dakota.
23. The chief Eastern railroads to-day are the ————, ———— and ————.
24. The chief western railroads to the Pacific are the ————, ————, ————, ————, ———— and ————.
25. ———— and ———— first explored the Missouri Valley and Columbia River.

IV. Resources and Industries

26. The invention of the cotton gin led farmers to settle the present states of ————, ————, ———— and ———— in order to plant more cotton.
27. McCormick's invention of the grain reaper led thousands of farmers to settle the North Prairie states, the Southwest, the Oregon country, New England.
28. Land ownership in the West was made possible by:
    a. The settlers squatting on any land they pleased.
    b. The government homesteading the land to settlers for $1.25 an acre.
    c. The railroads selling land given them by the government.
29. The tremendous crops of grain and cotton
    a. were all used up by American mills.
    b. had to be partly sold to foreign countries.
    c. were left in the fields to spoil.
    d. were saved by the farmers for seed to plant the next year.
30. California was settled slowly because it was so far from the East. Right. Wrong.

31. The fine soil—wonderful climate—finding of gold—attracted the Easterners by thousands about 1850 to California.
32. California had enough people (over 60,000) in one year to become a state. Right. Wrong.
33. By the time of the Civil War there were 24—36—40—42 states in the Union.

ELMER D. READ,
Instructor in the Western Pennsylvania School, Edgewood, Pittsburgh, Pa.

THE NEED FOR COOPERATION IN WORK FOR THE DEAF

It is not always a bad thing to be laid aside by illness. It affords time for reflection, as I have recently found, having been so unfortunate as to be sent to hospital soon after my return to South Africa. Now during the days of convalescence I receive a letter from the Editor of the ANNALS, asking me to write out an article on my recent visit to America. That was a wonderful experience, the influence of which will stay with me all my days.

After twenty years of voluntary work amongst the deaf in Great Britain and South Africa I thought I had a clear idea of what I wanted to study in America. Now looking back on all that I have seen and the conversations in which I have taken part, I realize that I have learned 100 per cent more than I ever imagined possible. This is largely due to the great kindness of everybody that I met in America. Here in South Africa we pride ourselves on being an hospitable people. We certainly cannot claim to be more hospitable than the people of America, for wherever I went I found overflowing kindness. The natural beauty of the country which was so abounding everywhere during the spring months of my visit made me long to transport some of the green fields and glorious trees to our sun-baked districts in this vast land. But my most abiding memories are incidents such as these: Miss Leonard's welcome when I arrived at Northampton close on midnight one wet and chilly night; the chat with

Miss Yale; Saturday afternoon in Washington in company with Dr. and Mrs. Hall, visiting some truly lovely gardens; Mr. W. C. Ritter, the deaf gentleman who showed me round his school for Negro children at Newport News, Virginia; the contagious enthusiasm of Dr. Goldstein at the Central Institute as he showed me his many research departments. These and other such memories will brighten and inspire for many years.

But the Editor has not asked for sentimental memories; he has asked for comments on the work amongst the deaf in America, but I fear he is going to be disappointed. I will not pretend that there are not some things I would like to comment upon. He would not be a true friend who pretended to approve of everything, but as I have to give a report to those good people who financed my visit (the Carnegie Corporation), I feel it is my duty not to say anything directly concerning the work for the deaf until that duty is fulfilled. But there is one thing which I do feel able to say, and it concerns a matter upon which I feel very strongly. In America and in the older countries of Europe people have been working for the deaf for many generations. Immense progress has taken place in almost every direction and still there is very little cooperation. The different schools of thought with regard to educational methods confer amongst themselves and know very little of each other. Preschool work, which includes the medical side of work amongst the deaf, is hardly in touch with later developments in the life of the deaf. Activities connected with the deaf in general life, *i. e.,* welfare work, social work, the religious life of the deaf, are at present almost entirely kept in water-tight compartments.

During my visit to America I was also charged to study something of work for the blind, and I had the privilege of attending the international conference which was held in New York in April, 1931. I was immensely impressed by the way in which people concerned in one department of the work are definitely interested in other departments. The life of the blind was thought of from the cradle to

the grave, and I cannot help feeling that we ought to think of working amongst the deaf more in these terms, although I realize that there are great differences between work for the blind and work for the deaf.

How then can cooperation be secured? In the first place we need a complete survey of what is being done throughout the world. I am glad to say that the Executive Committee of the South Africa National Council for the Deaf are trying to persuade our Government here to send a request to the League of Nations that they will carry out an international survey of work amongst the deaf similar to that which was carried out of work amongst the blind. I hope their representations will be successful, because the results of such a survey would produce an extremely illuminating document.

The next step is one that is perhaps very difficult to arrange, but as I heard it discussed at the Winnipeg Meeting of the Convention of American Instructors of the Deaf I do not hesitate to mention it, namely, that an international conference should be held. In my opinion the value and success of such a conference will depend entirely on whether it is completely representative. Conferences of educationalists have frequently been held. What is now needed is a conference of all those who in any way whatever are working in the interests of the deaf. What the outcome of such a conference would be it is impossible to say, but it is bound to work for closer cooperation, especially if everyone will go with an open mind, prepared to have his most cherished prejudices upset and to see that there is something to be said for theories he has always considered hopeless.

In all this the mind of the deaf themselves must not be ignored. Representative deaf people should be asked to express their opinion. After all, it is the life of the deaf we wish to see expanded into such fullness as we can know in this world. There is a temptation sometimes to work for spectacular results for individuals and to imagine that that represents complete victory over the handicap of deafness, but the fullness of life embraces much, and we must give everything we possibly can to

help the deaf into this fullness, and must withhold nothing from them which can add to the sum total of their happiness.

ARTHUR W. BLAXALL,
Chairman, S. A. National Council for the Deaf,
Cape Town, South Africa.

A CONVENTION WORTH GOING TO

One of the points emphasized by Dr. Gruver, in the address which he delivered at the meeting of the Convention of American Instructors of the Deaf at Winnipeg last summer, was *that teachers should take a more active part in the conventions.* An expression of what the teachers want might be helpful to those who are planning for the next meeting of the Convention. Consequently, I have made a few notes regarding the things that I should like to see and hear at the next convention.

First of all, I should say that the majority of the main addresses to the convention should be made by men who are actually engaged in some phase of the work. For ten or twenty-five cents, a person, while at home, can attend a lecture by some eminent educator. For a two-cent stamp an enormous amount of literature from Washington will be delivered at your door. If one does not wish to exert himself to this degree, all that he needs to do is to turn the dial of the radio and sit passively and listen to psychologists, philosophers, kindergarten teachers, art teachers, and industrial teachers. The opportunities to hear the leaders in our profession are few and the only medium for the exchange of ideas is furnished by the school papers and the conventions. It seems to me that it is radically wrong to waste valuable time listening to a copyrighted speech when we might be listening to someone actively associated with the work.

The various group conferences and round table discussions seem to be the most logical and most practical way to take care of problems which might require many lengthy discussions and much time. More teachers should be encouraged to take part in them, and the results of

these meetings should be published in full. Long speeches are but poorly attended and they often leave the listeners fatigued. The discussions are invigorating, and more such discussions with more teachers taking an active part in them would put new life into the conventions.

The Review of the L. P. F. for the foregoing year, (which appeared in a recent issue of the ANNALS), was so interesting and instructive that I should think that a convenient room might be set aside at the convention as a "Reference Room." In this room a file could be kept which would include short reports on outstanding achievements in our work, on recent developments in the general field of education, on problems that are met and the manner in which they are solved, and material describing any new mechanical or physical devices that might be profitably employed in teaching the deaf.

The "class demonstrations" are invariably demonstrations of some particular method of teaching. The latter has been developed under the supervision of the person who originated the plan, or under the careful direction of a disciple who has been closely allied with the author of the plan. Unless a teacher is thoroughly familiar with the method employed, there is little real practical value that can be derived from mere observation, little that can be taken into a schoolroom and used unless the whole system is instituted. To do this, a specialist in this particular field would be needed. If several teachers from different schools were to teach the same subject to the same group of children during the course of the convention, if these various demonstrations were to be discussed by a group of supervising teachers, who also represented a number of schools, if the teachers or officers in attendance would question both the teacher who gives the demonstration and those who discuss it,—if all these things were done, I am sure that the convention in general, and the demonstrations in particular, would be much more worth while for the average teacher. To carry out such a plan would take a great deal of work and perhaps it would seem hardly fair to the visiting teachers, but such a plan would benefit a great number of teachers.

If this plan should prove feasible, I should like to see Miss Elizabeth H. Rice of the Missouri School and Miss Helen Fay of the Kendall School among the "critics." Although these two supervising teachers seldom take an active part in conventions, their ability as teachers, as advisers, as analysts of both teachers and pupils, as supervisors, is unsurpassed and their aid in a project of this nature would be inestimable.

More time should be given to informal meetings. More real good can sometimes be accomplished in a "good old session" than can be accomplished in numberless formal meetings and by countless formal addresses.

The exhibitions from the different departments of the schools are always interesting. A considerable amount of work is necessary in preparing, transporting, and arranging these exhibits. The information usually given with the items exhibited is: Made by John Jones, age 18, class 7B. This information is rather inadequate; a short descriptive article might accompany these items. This article should tell the purpose in giving this particular type of work; the number of years the pupil (or pupils) who turned out the product has been in school and the number of years he has been doing this kind of work; the type of pupil—slow, very bright, average; the method of teaching employed; any special problems met, and how they were overcome; whether related language and arithmetic were taught, and if so how much time was spent on this phase of work; whether the work was done entirely by the pupils or whether part of it was done by the instructor; what has really been accomplished. These articles would help make the exhibits more valuable to some, and would in no wise detract from their interest to those who come just "to look."

The following is a list of some talks that would be interesting to me:

Mr. O. L. McIntire, What the three years additional work has meant to the deaf youth of Iowa.

Mr. Irving S. Fusfeld, Recent Psychological Developments, as related to the education of the deaf.

Mr. Ignatius Bjorlee, Rhythm and Emotional Response,

the value of rhythm over and above its value as an aid to speech development, balance, carriage.

Mr. Herbert E. Day, The Regional Conference of Superintendents.

Mr. Victor O. Skyberg, Rehabilitation, aid that might be available to the adult deaf and to the vocational student.

Mr. Daniel T. Cloud, Group Meetings for Teachers teaching the same subject in different grades. I should like to know whether this plan has had any effect upon the unification of various courses.

Mr. Elwood A. Stevenson, The Effect of Centralized Control upon the relationship between state and day-schools. And, although the desirability of having well-paid supervisors is unquestioned, I should like to know just what has been accomplished through this medium.

Dr. Percival Hall, The Future Gallaudet College.

Dr. Harris Taylor, A Report on the Reading Experiments carried on at the Lexington Avenue School two years ago—whether any additional work has been done.

Mr. Edwin G. Peterson, The Results of Vocational Training "outside of the school."

Dr. O. M. Pittenger, The Teacher and her Character. Some time ago Dr. Pittenger mentioned character as one of the essential qualities of a good teacher but did not define character; I should like his definition of *character*.

Mr. E. S. Tillinghast, A Superintendent's Debt to his Teachers.

Mrs. Vernon S. Birck, A House Mother's Opportunities.

Miss Patti Palmer, One-Act Plays; their emotional response and educational value.

It might be interesting to those in attendance to learn about the student government at the Iowa School.

I should like to hear Mr. Booth, Mr. Goodwin, Mr. Blattner, Dr. J. S. Long, Dr. Smith, and a number of other equally well-known leaders in the profession talk on any topic they might select, or I should like to hear them tell some anecdotes. I should like to hear from matrons, supervisors, field agents, from the much berated

parents—all of whom, perhaps, see things from angles that the teachers and superintendents in a school miss.

I realize that most of these subjects have been treated before and that some of the changes suggested would present great difficulties and create some delicate situations; nevertheless, these are just a few of the things that I should like to see and hear at the next convention.

ROBERT D. MORROW,
Head Teacher, Intermediate Department, Iowa School, Council Bluffs, Iowa.

A SURVEY OF INTELLIGENCE OF DEAF CHILDREN IN MINNESOTA SCHOOLS

The compulsory laws of Minnesota bring all handicapped as well as all normal children under the educational system of the state. Provision for education of the deaf is made in two ways, through the state school for the deaf and by special classes in the public schools of the larger cities. Through the efficient work of the County Welfare Boards, special effort is made to place every deaf child in school before the age of eight. It is believed that few, if any, are overlooked.

In the fall of 1930, Supt. V. O. Skyberg, of the Minnesota State School for the Deaf, called the authors' attention to a study of the intelligence of deaf children in Pennsylvania and West Virginia in which the Goodenough Intelligence Test was used.[1] He suggested that a similar study be made in Minnesota. The possibility of including in such a study all the children in so large a territory as Minnesota and thereby avoiding selective factors which might influence the results made the investigation seem well worth while.

The tests selected for use were the Goodenough intelligence test based upon spontaneous drawings and the Pintner Non-Language Group Test which was used with grades above 3B. Unfortunately Pintner's new non-language test for the primary grades had not appeared at the time the study was begun. As a matter of general interest the

[1]Edwin G. Peterson and James M. Williams, "Intelligence of Deaf Children as Measured by Drawings," ANNALS, 1930, Vol. LXXV (September, 1930), pp. 273-290.

Goodenough test was given to all the children, though its significance for children above the age of twelve is to be questioned, and the norms extend only to thirteen years.

The tests were administered by the senior author according to the directions specified in the test manuals. All the children were tested in their regular classrooms and class groups, the latter ranged in size from six to fourteen children. The Goodenough drawing test was always given first, and the Pintner immediately following. While the testing was in progress, the teacher made ratings as to her pupils' intelligence on a five-point scale, the points of which were described as follows: dull, backward, normal, bright, very bright. She was asked to supplement her ratings with any facts which she thought relevant.

In addition to the tests and ratings the following information on each child was obtained from the record files of the schools: sex; birth date, from which was computed the child's C. A.; grade; per cent of hearing for right and left ears separately as obtained from the most recent audiometer or radioear test on the child; age at loss of hearing; cause of deafness; and father's occupation.

In all, 406 children were tested, of which 144 were members of special classes for the deaf in the public schools and the remaining 262 were enrolled at the state school. The children were approximately equally divided as to sex, with a slight excess of boys in the public school classes. Distributions of the cases according to age, grade, sex, and occupational status of the father are given in Tables 1, 2, and 3.

TABLE 1

DISTRIBUTION OF CASES BY AGE, SEX, AND SCHOOLS

	Public			Institution			Both		
Age in Years	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
5.0- 7.9	7	6	13	9	5	14	16	11	27
8.0- 8.9	8	4	12	2	4	6	10	8	18
9.0- 9.9	9	5	14	2	4	6	11	9	20
10.0-10.9	8	4	12	11	4	15	19	8	27
11.0-11.9	10	8	18	10	6	16	20	14	34
12.0-12.9	10	11	21	11	15	26	21	26	47
13.0-13.9	9	7	16	6	14	20	15	21	36
14.0-14-9	4	6	10	17	11	28	21	17	38
15.0-19.9	20	8	28	50	58	108	70	66	136
20.0 and over	—	—	—	12	11	23	12	11	23
Total	85	59	144	130	132	262	215	191	406

TABLE 2

DISTRIBUTION OF CASES BY GRADE, SEX, AND SCHOOLS

	Public			Institution			Both		
Grade	B	G	T	B	G	T	B	G	T
Kg.	3	5	8	1	2	3	4	7	11
1	12	5	17	14	11	25	26	16	42
2	6	2	8	7	3	10	13	5	18
3	11	10	21	13	9	22	24	19	43
4	15	9	24	18	6	24	33	15	48
5	10	8	18	4	9	13	14	17	31
6	12	9	21	10	15	25	22	24	46
7	4	7	11	11	20	31	15	27	42
8	11	4	15	16	21	37	27	25	52
9	—	—	—	4	5	9	4	5	9
10	—	—	—	12	10	22	12	10	22
11	—	—	—	11	10	21	11	10	21
12	—	—	—	3	7	10	3	7	10
Special class	1	0	1	6	4	10	7	4	11
Total	85	59	144	130	132	262	215	191	406

TABLE 3

DISTRIBUTION OF CASES BY SCHOOL AND PATERNAL OCCUPATION (IN PER CENTS)

Occupational Category	I	II	III	IV	V	VI	VII	Unknown (cases)
Public	2.4	5.7	15.4	18.7	30.9	10.6	16.5	21
Institution	0.9	1.8	9.5	44.3	15.4	5.5	22.6	41
Total deaf	1.5	3.2	11.6	35.2	20.9	7.3	20.4	62
Gen. Pop. of Minnesota	2.5	5.0	14.1	24.1	22.3	13.0	17.6	

The scale used for classifying occupations of the fathers of these children is one which was derived from classifying and computing percentages for all the occupations of Minnesota males as recorded in the census of 1920. It is a modification of the Barr scale for occupational intelligence and the Taussig industrial classification. The seven categories each include a variety of occupations but they can be briefly described as follows: I, professional; II, managerial and semi-professional; III, minor business, skilled trades, and clerical; IV, farmers; V, semi-skilled trades; VI, slightly skilled trades; and VII, day laborers.[2] In the public school classes the distribution corresponds very closely to that of the population in general, except for a deficiency of farmers in the cities which is made up by an excess of factory workers in Group V. In the state

[2]Goodenough, Florence L., and Anderson, John E., "Experimental Child Study." New York. The Century Co., 1931. See Appendix A.

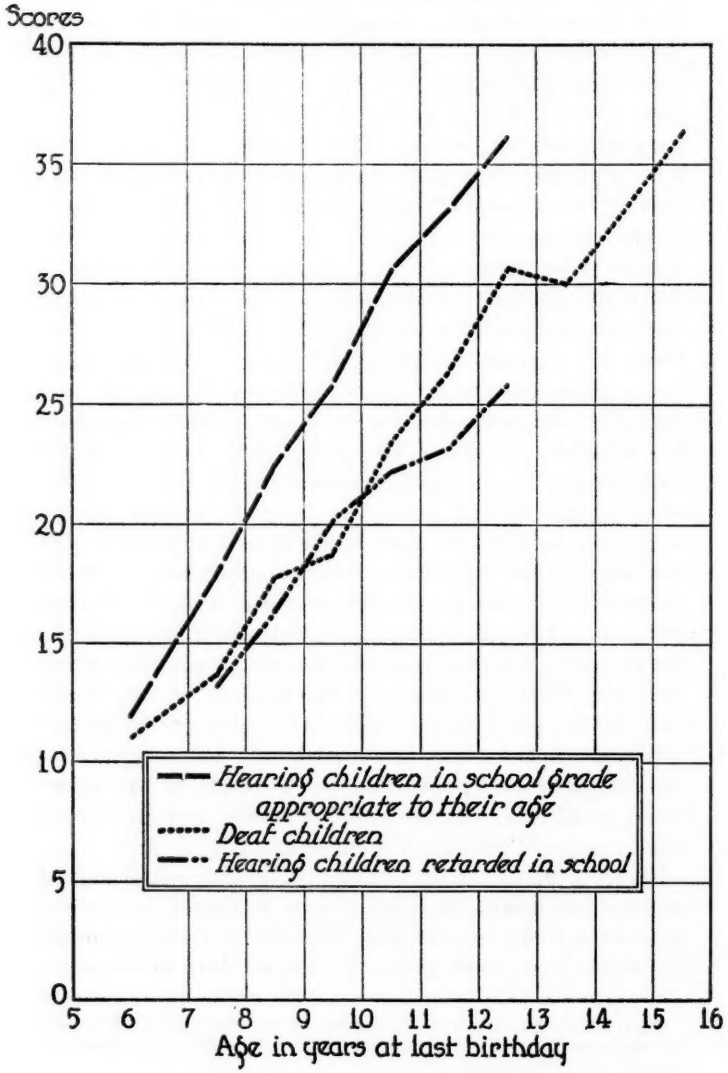
institution the three upper classes make up a smaller percentage of the total than they comprise in the general population, while the farmer group is greatly overweighted. Although the excess number of farmers' children in the state school is partly attributable to the fact that provision for their education cannot be made in their home communities, nevertheless it should be noted that there is a decided preponderance of farmers' children in the deaf group as a whole. This suggests a possibility that the comparative lack of facilities for safeguarding children against the sequelæ of such contagious diseases as scarlet fever, influenza and the like may bring about a true difference between urban and rural groups in the incidence of deafness. However, a tabulation of the alleged causes of deafness (congenital or acquired) showed no difference between the farmers' children and those of other occupational classes among the cases for whom information was available. Since the data for the rural children were much less complete, further investigation is needed before the question can be answered conclusively. It is noteworthy, however, that in the survey of American schools for the deaf made by Day, Fusfeld, and Pintner, in 1924-25, 29.6 per cent of the deaf were children of farmers.[3] When compared with the percentage of farmers in the United States as a whole as reported in the 1920 census (18.74%) the excess for the deaf is approximately 11 per cent, which corresponds almost exactly to the findings of this study. Likewise the percentage of farmers' children in the Minnesota State School (44.3) shows about the same excess over that of the general population of Minnesota as was found in the residential schools included in the national survey when compared with the United States as a whole.

Figure I shows the age changes in median scores earned on the Goodenough drawing test as compared with those made by the hearing children used for standardization of the test. The latter group is divided into two classes,

[3]Day, H. E., Fusfeld, I. S., and Pintner, R., "A Survey of American Schools for the Deaf, 1924-1925." The National Research Council, 1928, Washington, D. C.

FIGURE I

Comparative Scores of Deaf and Hearing Children on the Goodenough Intelligence Test.



those enrolled in the grade appropriate to their chronological age, and those who are one or more years retarded in school. It will be seen from this figure that the deaf children upon the whole fall between the hearing children who have made normal school progress and the retarded group of hearing children.

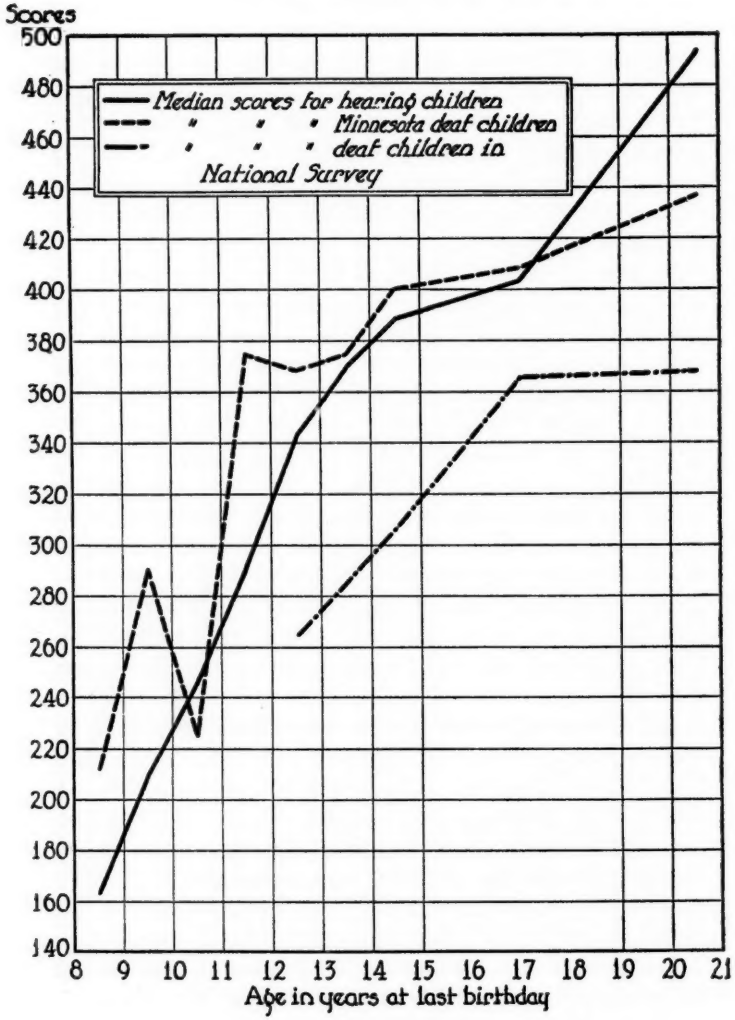
Figure II shows the corresponding data for the Pintner test. In this case the curves show (a) the midscore corresponding to the 50th index at each age as obtained for hearing children in the original standardization, (b) the median percentile as obtained from Pintner's table derived from deaf children in the National Survey, and (c) the median scores at each age in this study.

Because of the small number of cases at each age level, the curve for the Minnesota children is irregular. The trend, however, is very different from that obtained by the drawing test. According to this test, the Minnesota deaf children not only stand far above the medians for the deaf children in the National Survey, but they even surpass the standards for hearing children. This is contrary to the usual findings for deaf children. We are unable to account for these results, since the tests were administered and scored according to standardized directions. None of the children had had previous experience with the test.

The correlation between the IQ's on the two tests for 229 children to whom both were given was $+.326 \pm .04$. The mean IQ on the Goodenough test for this group was 83.9 with standard deviation of 19.3. On the Pintner the mean IQ was 97.7 with standard deviation of 21.1. The median Pintner IQ for 312 children was 98.4. For the state school, the median was 91.6; for the public school classes 109.1. The corresponding median on the Goodenough test for the state school was 89.5; for the public school classes 84.4 and for the 391 cases combined 87.7. The median IQ's on the two tests for the state school correspond rather closely; for the public school classes they differ greatly. The IQ's on the Goodenough test, as found in this study, are in fairly close agreement with those reported by Peterson and Williams on the Goodenough test;

FIGURE II

Comparative Scores of Deaf and Hearing Children on the Pintner Non-Language Group Test.



who found a median IQ for 330 children from five institutions of 84.6.

Table 4 shows the relationships between the median IQ's earned on each of the two tests and the teachers' ratings of intelligence. Because of the possibility of varying standards from school to school, we have treated the results separately.

TABLE 4.

RELATIONSHIPS BETWEEN MEDIAN IQ EARNED ON THE TWO TESTS AND TEACHERS' RATINGS.

(P=Pintner; G=Goodenough)

Ratings	Schools A		B		C		D		Schools combined	
	P	G	P	G	P	G	P	G	P	G
Very bright	107	103	133	97	106	103	114	99	114.7	100.4
Bright	92	96	126	91	112	97	104	75	96.9	94.0
Normal	97	91	126	87	97	102	104	79	98.5	90.2
Backward	91	88	114	85	99	99	94	72	93.9	87.0
Dull	84	97	103	81	112	88	—	57	89.2	92.3

Contrary to the findings of Peterson and Williams, a fair relationship between the teachers' ratings of ability and test score is shown for both tests. Although the individual cases show exceptions to the general rule, the median IQ's decrease fairly regularly with decrease in rating. There are a few inversions, in the main occurring where the number of cases is small.

All children had been given audiometer or r a d i o e a r tests. The relationship between test scores and per cent of hearing is shown in Table 5.

TABLE 5

MEDIANS ACCORDING TO PER CENT OF HEARING

Per Cent Hearing	PINTNER INDEX Schools A	B	C	D	Cases All	All	PINTNER PERCENTILE Schools A	B	C	D	Cases All	All
0-14	43.25	69.5	58.5	40.0	47.5	64	62.3	87.5	90.0	47.5	69.4	57
15-24	49.4	—	42.5	60.5	52.8	73	73.0	—	57.5	92.5	82.0	64
25-49	44.3	67.7	49.0	55.0	56.2	89	64.8	94.8	75.0	62.5	76.4	38
50-74	49.4	68.3	64.5	59.0	58.4	61	60.0	96.6	92.5	32.5	87.9	45
75-100	45.0	36.5	60.0	54.0	58.0	15	72.5	50.0	87.5	72.5	87.5	9
	PINTNER IQ						GOODENOUGH IQ					
0-14	89.6	71.5	114.5	84.0	95.0	64	91.0	84.5	87.0	69.0	93.1	82
15-24	94.8	—	86.0	110.0	99.2	73	88.4	—	92.0	76.5	91.7	83
25-49	93.5	116.0	95.0	106.0	102.1	91	91.6	88.5	100+	74.5	93.2	106
50-74	96.6	120.4	108.0	112.0	109.2	61	87.7	87.5	100+	91.0	88.9	69
75-100	100.0	81.5	113.0	99.0	108.8	15	100+	72.0	100.5	79.0	97.0	19

The per cent of hearing as given in Table 5 is based upon the average for the two ears, which were tested sep-

arately. The cases with less than 25 per cent hearing have been subdivided into two categories since it is generally recognized that hearing which is less than 15 per cent of normal cannot be serviceably amplified even by the best of the present devices. Upon the whole, the children with most nearly complete loss of hearing make distinctly lower scores on the Pintner test than do those with some residual hearing. The scores on the Goodenough test show little or no relationship to extent of hearing. The data were also treated with respect to age at loss of hearing, but no relationship to scores on either test was found. This is in accordance with the findings for the National Survey.

The Stanford Achievement Tests were given to 41 children in one public school. In this school the median IQ on the Pintner test was 118; on the Goodenough, 86. The median E.Q. on the Stanford Achievement was 89. Using the age-grade standards described in the manual of instructions for the Stanford Achievement test, a grade progress quotient was obtained for each child by ascertaining the chronological age appropriate to the grade in which he was located and dividing this age by his chronological age. The mean of these quotients was 89, which corresponds exactly to the mean educational quotient. This shows that although the group of children in question are retarded in school if classified according to chronological age, they are on the average placed correctly from the standpoint of educational achievement. For these children the correlation between the Pintner IQ and the Stanford E.Q. is $+.39 \pm .10$; between the Goodenough IQ and the Stanford E.Q. it is $+.34 \pm .10$.

Summary

1. All deaf children enrolled in the Minnesota public schools and in the state school for the deaf were subjected to a testing program. The children from Grade 3A and above were given the Pintner Non-Language test. All children of kindergarten and up were given the Goodenough Intelligence test, based upon spontaneous drawings. In all, 406 children were tested, which we believe includes

all deaf children in the state with the exception of a very small class in a remote town and a few idiotic children in the state institution for the feeble-minded. A small number of deaf children may also be enrolled in private schools, but these are believed to be few. It is safe to say that the sampling includes well over 90 per cent of the total.

2. A comparison of the paternal occupations of these children with those of all employed males shows a deficiency at each occupational level except among the children of farmers and of day-laborers. The excess of deaf among the farming group is particularly marked.

3. On the Goodenough test the deaf children, age for age, are somewhat below the standards of hearing children who are making normal progress in school. On the Pintner test they average very close to Pintner's standards for hearing children and much above the median scores for deaf children in the National Survey. The reason for these discrepancies is not apparent.

4. The correlation between the IQ's earned on the two tests was $+.326 \pm .04$. The median IQ on the Pintner test was 98.4; on the Goodenough 87.7.

5. A moderate degree of agreement between teachers' ratings of the intelligence of their pupils and scores on the tests was found.

6. In the case of the Pintner test, a small positive relationship between test score and per cent of hearing was found. No such relationship was apparent for the Goodenough test. Neither test showed any relationship to age at loss of hearing.

7. Results of the Stanford Achievement test which was given to 41 children in one school yielded a mean educational quotient of 89. For these children the mean grade progress quotient was also 89. In this school, therefore, the children appear to be correctly graded from the standpoint of their educational accomplishment.

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TEACHING PUPILS HOW TO STUDY

The keys to the land of knowledge — Who? What? When? Where? Why?—are often hard to apply without aid. It is the knowledge of how and when to apply these keys that gives a person the ability to study easily and profitably. Teachers often complain that a pupil doesn't seem to understand how to study. This is true. Too often the teacher takes for granted that the science of how to study, for it is a science, is something that just comes easily when a textbook or problem is put into the pupil's hand. As we find out, all too soon, not only does this knowledge not come naturally, but often, it doesn't come at all.

Another difficulty is that the teacher has become so used to understanding what certain question forms mean that she does not comprehend that those question forms may be misinterpreted by the pupil, resulting in poor study hour work.

The apparently simple question form Why? is a bogey of no mean order when the pupil is required to use it himself to deduct a reason from a result. That is what most answers to the question Why? entail. It is a big jump from a language drill exercise of the type found in many drill books to this deductive answering. For example, note the difference in these forms of answering.

Mary broke her doll.
She cried.
Why did Mary cry?
Answer: Because she broke her doll.

There is no choice in such an answer, but that is not the kind of answer the upper-grade pupil will be required to find from his textbook. He may have to read a whole paragraph or more and then deduct the answer, as in history or current events work. Example: "Books began to be cheap in Germany the latter part of the fifteenth century. Why?" The answer to this question is found by the pupil's reading of the invention of the printing press by Gutenberg in 1448. That might take up a page or more. He will have to use his reasoning. Often, he will put a result by stating the question in other words instead of finding the reason lying back of the result and might,

erroneously, answer the question on the cause of the cheapness of books by stating "Because they were one-fifth as much as they were in England." These are quotations of an actual question and misconceptions of what the question meant. Then the teacher is at last forced to admit that the pupil did not fully comprehend the meaning of the familiar question form, Why?

To correct this difficulty the writer has worked out an outline which will serve as a prop in answering questions of the type the pupil will meet in his textbooks and in the world about him. These notes are given to the older pupils and kept for study hour as a handy reference.

HARD QUESTIONS TO ANSWER

1. Why .....?

   Answers:

   Because ..... (Give a reason—something that happened before the part mentioned in the question.)

   So that ..... (Give a purpose.)

   To ..... (Give a purpose.)

2. How .....?

   Answers:

   By....ing (This is used mostly in *oral* work and is not very good for History answers.)

   Give an explanation or tell about that thing. (This is the best kind of answer for most of our study hour work.)

3. Who .....?

   Answers:

   Tell something important about that person that makes him different from most other people. (Don't say "..... is a man.")

   Use the relative pronoun ..... who ..... in your answer and it will help you tell something interesting about the person.

4. How _____ treat _____?
   Answers:
   Use an adverb.
   Give an explanation.

5. How does _____ look?
   feel?
   taste?
   smell?
   seem?
   Answers:
   Use an adjective. (Do not use an adverb.)

6. How does _____ work?
   talk?
   play?
   etc.
   Answers:
   Use adverbs.

The pupil should not be burdened with a list of other easy question forms which present no difficulty, as his attention must be concentrated on these hard forms. He can answer the other forms himself with ease.

Also, the pupils should be given this note about answering questions.

In answering questions don't be satisfied with putting down a sentence copied from what you are reading. Ask yourself, "Does that answer tell enough to the person who has asked the question?" Remember, people ask questions to find out about things they do not know, or are not sure of how to answer them.

The last point about the purpose of a question is difficult for most deaf pupils to understand, for their drill in the beginning grades on such obvious remarks, under the false guise of questions, as "What color is my dress?" has given most of them an idea that a question is merely an inverted statement and the answer is not important, as the questioner already knows the answer. This leads to vague answers and incomplete statements by the pupils.

Much drill is needed on these forms before it can be expected that the pupil will use them intelligently. It is true that he receives some drill on these forms as he goes through the grades, but it is mostly of the formal drill type and that is very different from making him deduct an answer from a paragraph or page in a textbook, or even from his own thinking.

Thought questions should be given the older pupils to stimulate their reasoning, such as, "When do you think ——?" "What do you think about ——?" "Where do you think he ——?" "What do you think happened then?" "Which would you have been, a Puritan or a Cavalier, and why?" "Why do you think —— failed?"

This is not easy work, but it is through the use of these keys that the pupil enters into the world of his own thinking. If education really means "To lead out," we must supply that by giving the pupil a chance to lead out his mind.

Along with this basic work on difficult question forms is a set of RULES FOR STUDY that the writer has also worked out and found practicable. This list is put into the hands of the pupils and is used by them in their independent studying.

RULES FOR STUDY

1. Read the lesson one time, without finding the answers.
2. Find the answers to your questions by—
   (a) Reading the entire paragraph or page first.
   (b) Reading the questions until you understand what you are trying to find out.
   (c) Answering only what is asked.
3. If you become tired, study something else for awhile.
4. If you can't answer a question, leave a few lines for your answer and go on to the next questions that you can answer.
5. If you use a new word put the meaning under it.

6. If you don't know what a word or phrase means, ask about it the next day. (Try first to find out what it means by reading the rest of the paragraph.)
7. Make a list of important things to remember, if no questions are given.
8. Go over your questions and study *only* those answers you have trouble remembering. (Don't waste your time reviewing what you know.)
9. Close your books and ask yourself questions. Mark those questions that you cannot answer easily. Look up those answers.
10. In your spare time review the lessons that you had the day or the week before.
11. If you make a mistake, try not to make it again.
12. Don't write what you don't understand.

With these tools of study the intelligent upper-grade pupil should be able to help himself to a more complete knowledge and a more comprehensive understanding of his work.

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Instructor in the North Carolina School,
Morganton, N. C.

THE STROBILION FOR THE DEAF CHILD[1]

It is with much hesitation that I speak of the strobilion before a medical research conference. First, because I believe that one should speak before a research conference on that which has been accomplished rather than on that which is merely hoped for as a future possibility. Second, because I have added but very little to the strobilion and do not wish to give the impression that I claim to be its inventor. Third, because the strobilion is neither an otological nor a rhinological nor a laryngological instrument, but an educational instrument.

Several years ago I began wondering why the strobilion, although this instrument has been known under various

[1]An address given before the monthly research conference of the Oscar Johnson Institute, St. Louis, Mo., February 3, 1932.

names for nearly fifty years, was not used by the speech teachers of deaf children. The Central Institute for the Deaf accommodated me by procuring for me from a manufacturer a Scripture Strobilion, and I soon discovered two great defects which must have discouraged teachers from using the instrument in the actual speech teaching. First, the circular mark of vibration frequency of the speaker's voice, that is, the pitch, appeared to his eyes as an *immoderately blurred* figure; but a small child must be shown *with clearness* what he is to see and to be guided by. Second, the pitch change appeared to the child's eye as an *expansion and contraction of a multiplicity* of concentric circles on a disc. This kind of expansiveness of the visible mark required of the child too much abstract thinking; it was like expecting a child to learn to swim by observing the ripples which he leaves on the water in frantic efforts to keep floating. There were minor inconveniences I leave unmentioned.

I improved the strobilion so that deaf children could be taught with relative ease to observe the proper slides and jumps of their speaking pitch. Dr. Helen Schick and I then tried the method on several deaf children in order to be sure that the method was practicable. We found it very practicable. But still I could not persuade the teachers to use it. Teachers become so engrossed in routine methods that they hate to try out any possibility of something new. I was reminded of what one of my children said as a baby, when his mother placed a dish before him and he refused to eat it. Questioned why he would not eat it, he replied: "Because I have never eaten it before." So, new educational methods can be tried out only by graduate students who as candidates for higher degrees are willing to write a thesis on the results of educational experimentation.

We tried to persuade the Board of the Central Institute for the Deaf to set aside from possibly available funds $2,000 or $3,000 for the establishment of attractive graduate fellowships, paying from $600 to $1,000 a year, for

educational experimentation. But the Board of the Institute made no sufficient appropriation for educational experimentation to cover this field. Therefore, I cannot report, to this research conference, any learning curves obtained by aiding the teaching of speech with the strobilion. I can only express my hope that such educational experiments will become a reality in years to come.

But, since I am on my feet, let me still say a few words on the history of the strobilion. That one can make very frequently recurring things, such as speech vibrations, visible to the eye with distinctness by the simple expedient of making the exposure of the eye intermittent, has been known for a hundred years. Either one moves an opaque screen, with many holes in succession, rapidly before the eye and thus makes the exposure of the eye dependent on having one of those holes momentarily before it, or one illuminates the object with intermittent flashes of light. In either case the stimulation of the eye is reduced to intermittency instead of being an actuality all the time. If we could wink, that is, throw the eyelid down and up, with sufficient frequency, the effect would be the same. In the strobilion, acetylene gas has to flow through a manometric capsule which is very thin, so that compression of the capsule almost stops the flow of gas. The speaker speaks against the capsule and compresses it with the frequency of the voice vibrations. The acetylene flame shoots up and dies down with the same frequency. If the dotted object happens to move with such a velocity that the dots are in the same places, whenever the flame shoots up, then and then only do the dots appear to stand still distinctly. In every other case, in every case of unequal frequency, the dots seem to move or altogether blur into grey.

A Dane, Forchammer, tried to introduce this method into the schools for the deaf, but found the teachers of deaf children as unwilling to use a new method as we found them fifty years later. He used dots distributed either over a drum or over a disc and called both phonoscopes. E. W. Scripture later adopted the disc and called

it strobilion; and C. E. Seashore adopted the drum and called it tonoscope. The strobilion is more easily handled and less expensive and therefore preferable in a school.

Scripture had a great veneration for what he conceived to be scientific laws dictated by music. So he represented the diatonic scale with its inconsistency of pitch increase on the concentric circles of his disc. Speech, however, is not performed in diatonic or any other scale intervals. Pitch proceeds in either slides or jumps of perfectly indefinite spans. Speech frequencies are not taken in pharmacological doses, but to suit the momentary appetite of the speaker. It is only the direction, up or down, which the speaker cannot arbitrarily choose, and which the deaf child must principally learn.

The first thing I did, therefore, was to discard the musical scale disc of Scripture's manufacture, to draw a new disc with small and numerically equal frequency increases and to have a copper plate made from which I could reprint the disc. A great deal of the avoidable blurring of Scripture's strobilion was thus eliminated and a more delicate stepping of the record was made possible.

The next thing I did was to screen from view the whole disc with the exception of a vertical strip from the center up. A fall in pitch of the child's voice was now seen by the child simply as a fall of the record mark, and a rise in his voice was seen as a rise of the mark. Even a small child could quickly catch the idea and be guided by it. As a matter of fact, Dr. Schick and I never had any difficulty in explaining the meaning of the marks.

The next thing I did was to screen even a part of the vertical strip visible by a window slot which the child could easily move up and down. This was the advantage of the movable window slot. The strobilion disc always records also at a place representing two or three times the voice tone frequency and also at one-half and one-third the voice tone frequency. The presence of five simultaneous marks, though one is the strongest and clearest, confuses the child. The adjustable window slot covers all but

the chief record mark and thus eliminates all possibility of confusion in the learner.

I am sorry that I cannot demonstrate the actual learning practice of a deaf child to this audience, because only two or at most three people could actually observe the child's action, not a whole roomful. And it would also require turning off all the lights in the room except the tiny acetylene flame of the strobilion itself.

A minor improvement which I made on Scripture's design is the replacement of a rubber tube and rubber receptacle pressed against the mouth of the speaker by an easily washable and short aluminum funnel, shaped so that the speaker can fit into it his face, that is, chin, mouth and nose. The inclusion of the nose is important in order to catch the nasal sounds of speech which are far from infrequent.

During the last year I have been working on the question whether the acetylene flame should not be replaced by a neon glow lamp operated by an amplified electric current coming from a microphone modulator placed near the child's mouth. At first glance the idea seems overwhelmingly tempting, although the cost of the instrument would be increased by at least fifty dollars—from about $75 to $125. In Seashore's Tonoscope the flame has been replaced by the glow lamp successfully. That instrument, we must remember, is used to record notes sung by a singer, and not to aid in giving natural speech to deaf children.

Long continued research, covering experimentally all the questions at issue, has led me to the conclusion that the acetylene flame should be retained for the strobilion. The reasons are the following:

1. The best mark obtainable with a high class amplifying system and a neon glow lamp is no clearer than the best mark obtainable from a well adjusted acetylene flame.

2. The learning child must have readable "copy" before him which indicates symbolically the slides and jumps in the sentence the performance of which the child is to

practise. The acetylene flame happily illuminates this copy before the child speaks. But the neon lamp is dark before the child speaks. This requires a very inconvenient additional provision which illuminates the copy, but goes out at the moment the child begins to speak, since it would dim the clearness of the speech mark if it did not go out.

3. The microphone, in order to be activated by the nasal sounds of speech, must be provided with the same face funnel which serves the manometric flame, so that the greater convenience expected from the microphone does not materialize. Practising speech with the strobilion is something very different from practising song with the tonoscope.

MAX F. MEYER,
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SOME ORAL READING PROBLEMS IN THE EDUCATION OF THE DEAF

In a discussion of the major problems in oral reading, there is usually a wide difference of opinion as to the correctness of principles. In dealing with similar problems in the field of special education, the same difficulty appears. Education is a changing process, and progress in it is based on conflicting views of intelligent teachers. The purpose in this brief paper is to present a few problems in oral reading as they have been met in everyday teaching.

As in all forms of oral reading, the importance of a good approach cannot be over-estimated in relation to the deaf. This type of handicapped person must be carefully prepared to receive what is to be read, otherwise the whole of the reading will be lost. The reader must be in the proper position. He must be reasonably close to the observers. A distance of not more than fifteen feet should intervene, so as to get the most satisfactory results and to lessen the mental and optical strain on the pupil's part as much as possible. The reader's head must not be too

high above the line of observation. It is necessary for the light to be thrown in his face and not on his back. The wise reader will move his body and his head but little, as it is obvious that reading the lips is, at best, difficult. So much for the externals.

In order to cement in the minds of the "listeners" the nature of what is to be read, great care must be shown to assure a grasp of it. Unless the deaf have the advantage of proper thought-content at the beginning, the reading will be most ineffective. A well-known expression of the deaf is, "What is it all about?" A slow and easy, but brief and expressive, introduction is a necessity.

It is imperative that the reader incorporate a reasonable number of rest periods in an extended reading. These rests need be only very brief, and can be varied by the use of natural signs. Any sensible matter, or plan, whereby the observers are enabled to cease focusing their eyes on the lips of the reader will be effective. The skillful teacher knows that the telling of an interesting story by way of illustration will produce a certain restfulness. An anecdote well told is easier to follow than formal reading.

There are words more or less readily recognizable by the deaf in nearly every oral statement. For istance, in the statement, "The artistic house rests far back in the woods," the words "house" and "woods" may be designated as key words. In an instantaneous recognition of key words, the listener obtains a sort of foundation upon which he can quickly build an understanding of the other words of the sentence. It is the oral reader's business, then, to stress properly the key words in reading to the deaf.

Obviously, the deaf can get no benefit out of the reader's voice. The use of mechanical hearing aids is still relatively unimportant in the education of the deaf, due to imperfections in the instruments that are available. It is necessary, therefore, for the successful oral reader to find a useful substitute in this respect. The most logical and widely used method is the use of facial expression. To the

reader with an expressive face, the deaf look with assurance for an intelligent portrayal of the reading. This equipment in a teacher is one evidence of ability. In the use of the voice perfect naturalness is desirable in order to obtain natural effect as a whole. A look of the eye will often express a feeling more than words and the oral reader should recognize this in this special problem.

It is not enough that the reader feel that the listeners know about what he intends to read. There must be a consciousness that there is a real grasp of the meaning as the reading progresses. Interpretation of the facial expressions of the members of the audience will give this knowledge. Another method is to halt the reading and ask some pertinent question about the content. This latter method can be successfully employed if the break is not too great, and if it is done in an interesting manner. An object may be produced which refers to the reading, and in this way the reader will know if the deaf sense the connection. This latter plan has the smack of classroom procedure, and will be boring, unless cleverly done.

One of the most important points to remember is that the reader must strive for naturalness of expression, and at the same time retain a keen sense of the handicaps under which the deaf labor. If the reader is unnatural in the reading, it may defeat the very purpose for which it is intended. Furthermore, the majority of individuals are affected in their oral reading, and the deaf should be trained to read the lips and study the expressions of the masses in actuality. So-called mouthing is one example of unnaturalness that is not only useless but even detrimental to the observers. The teacher and other individuals interested in oral reading to the deaf will be successful in their tasks when they employ repetition without monotony, enthusiasm without exaggeration, and patience without compassion. An eminent educator of the deaf once said, "In teaching, make sure you teach at least one thing well." This truth is applicable to oral reading to the deaf in that it is advisable to read with the avowed purpose of creat-

ing in the minds of the "listeners" a true picture by always employing carefully at least one vital principle.

A few of the things that require careful consideration in teaching oral sight reading to the deaf are:

(a) A proper introduction.
(b) The position of the reader and external influences.
(c) There should be brief rest periods, or pauses.
(d) Choice of words; key words to be stressed.
(e) Lack of voice value to be counterbalanced by facial expression.
(f) Sense of grasps of meaning to be observed in the pupil.
(g) Naturalness must be retained, with a full understanding of the pupil's handicaps.
(h) Repetition without monotony.
(i) Enthusiasm without exaggeration, and, above all, inexhaustible patience.

LLOYD EDEN BERG,
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MISCELLANEOUS

Trials of a Deaf Man.—In "The Short Autobiography of a Deaf Man" in the *Saturday Evening Post* for April 23, 1932, Mr. Harold MacGrath, writer of numerous novels, describes the variations in personality growing out of deafness. In his boyhood, some forty years ago, after an adventure on a frozen pond in which he managed to fall through into the water, he found himself gradually losing hearing until his deafness became practically total. The reaction of the first years that followed was an intense shyness, in which he lived in a hermit-like aloofness from others. He had, when very young, been absorbed by the ambition to become a great musician, a wish which was thwarted when Nature "with one callous gesture" swept his goal aside. He became moody, and when alone would give way to fits of excessive rage against the fate which set him aside from his fellow men.

Journalism appealed to him, and after a long and arduous apprenticeship he made his way gradually to a position of eminence as an author. From this vantage point, looking back over the path he has come, he views with a saving, philosophic turn of mind the difficulties he encountered.

Nature, he feels, is a harsh mistress in the tricks she plays. The blind man who has once seen, or the deaf man who has once heard, he regards as a case of "exquisite agony." He himself, he believes, was saved from a life of despondency because "a sense of laughter" stood at his elbow. He was thus able to make light of the countless inconveniences occasioned by his deafness. Instead of permitting his troubles to leave a permanent impress on his personality he gradually learned to shed them. Further, although deafness makes for a timid incertitude, there is ample opportunity in a life in the open for the unfolding of one's full nature.

The perfection of the ear phone has enabled him to make the contacts that bring to him all the pleasures of the world of sound. The benefits he thus derives far outweigh all the inconvenience of carrying about the cumbersome and often bulky mechanical aid.

Aid to Deafness Via Bone Conduction.—Dr. Frederick Bedell, professor of physics at Cornell University, spoke during the annual meeting of the National Academy of Sciences at Washington, D. C., April 26, 1932, on "A Deaf Speaker," a device by which deaf persons may, via bone conduction, be helped to perception of sound stimuli. The need for such a device, Dr. Bedell declared, is evident from the fact that from ten to fifteen million persons in the United States suffer from impairment of hearing.

The device which Dr. Bedell has perfected corresponds to the ordinary loud speaker, and by it sound vibrations with regulated intensity are brought in contact with the teeth, cheekbone or the bony structure of the forehead. The aim appears to be to "detour" the vibrations around the middle ear—where in many cases the auditory defect

is to be found—and so set the liquid of the internal ear in motion, thereby exciting the nerve endings of the auditory nerve in the organ of Corti in the cochlea. The nerve impulses thus aroused are conducted by the auditory nerve to the brain, thus in effect producing "hearing." The problem for the operator of the device is to accommodate the vibrations to the type or character of the middle ear loss. In a number of individuals with whom the device has been tried, distinctly better hearing was the result; in some there were signs of an awakened hearing where previously there had been none. Dr. Bedell is of the opinion that his device could prove useful in schools for the deaf, intimating that it could be employed satisfactorily as an adjunct to the teaching of speech.

Dr. Bedell's apparatus, which goes by the name of Vibravox, is a sound-proof container about the size of a cigar box. From it extends a semi-flexible transmitting tube at the end of which is attached an ordinary wooden tongue blade that can be brought in contact with the teeth or other bony structure of the head, thus forming a path for the vibrations when the apparatus is connected with the radio, the phonograph or the microphone for direct conversation.

The use of the instrument, according to the *Mount Airy World* for January, 1932, was demonstrated by Dr. Bedell with pupils of the Pennsylvania Institution on January 11, 1932, but no statement is made of the results obtained.

The Northern California Council for Education of Exceptional Children.—On April 16, 1932, the Northern California Council for Education of Exceptional Children held its Third Annual Conference in Oakland, at Mills College, with a diversified and instructive program for consideration. The section meetings included groups dealing with the visually handicapped, behavior problems, the hard of hearing, administration and supervision, children of lowered vitality, the mentally handicapped, the crippled, speech correction, and the deaf. In the last-named section papers were read by Mrs. Vivian S. Lynndelle, of

the California School for the Deaf, on "Speech and Speech Reading," by Miss Virginia Rosser, of the Gough School, on "Developing Accuracy and Speed in Arithmetic," by Mrs. Gertrude Taylor, of the Gough School, on "Development of Language Principles Found in Readers," and by Dr. J. L. Horn, of Mills College, on "Living in the Hearing World."

The Northern California Council for the Education of Exceptional Children, formally established three years ago on the initiative of leaders in the work of special education, is the response of California's recognition of the need for organized effort and sentiment in behalf of children who must face life with a handicap. Its purposes are definitely set forth in this excerpt from the proceedings of the first conference held in San Francisco, April 26, 1930:

A common cause and set of purposes to effect the cementing of the membership, thus making it function in a profitable manner, and justifying its existence, should be outlined and considered at the outset:

1. To concentrate, organize, and crystallize all effort through one body for the advancement of special education.
2. To initiate movements through constructive thinking and planning for the benefit of this phase of education.
3. To educate the public regarding the conditions, needs, and status of special education.
4. To disseminate knowledge and information of the general field of special education among the members of the council.
5. To formulate, promote, endorse, and introduce necessary and beneficial legislation for the betterment of special education.
6. To encourage proper and necessary special training for teachers in this field and to provide centers for this training.
7. To cooperate in every way with teacher, special school, and State agencies for the advancement of standards and accomplishment.
8. To afford a center, a clearing house, or bureau of information for all statistics, needs, inquiries, and varied information concerning all branches of special education.

The present active membership of the organization comprises approximately 200 persons, representing every field of special education, and from 300 to 350 individuals attend the annual conferences.

The executive authority of the Council is vested in a Governing Board of 12 members, and it is a matter of gratification to educators of the deaf that Mr. Elwood A. Stevenson, principal of the California School for the Deaf and director of schools for the deaf throughout the State,

had the honor of being chosen president at each of the annual meetings of the Council since its establishment.

Information About the Deaf for the Public.—In an attempt to meet the numerous requests from many sources for information concerning the deaf, Supt. E. S. Tillinghast of the South Dakota School has drawn up a pair of pocket-size booklets that bring together facts that will give the layman a clear view of what is being done for the deaf in the way of educational provision.

One of these booklets is addressed "To Parents of Little Deaf Children," and, in addition to an introductory article by Mr. Tillinghast, its contents comprise a series of reprints of related topics such as: The Preschool Child's Mental Health, by Dr. Arnold Gesell of Yale University; The New Emphasis Upon the Little Child, from the *Journal of Education;* A Field Worker's Help to Parents, by Mr. O. W. Underhill of the North Carolina School; To Mothers of Little Deaf Children, by Miss Eleanor B. Worcester; Parents Helping the Teachers, by Miss Helen Fay of the Kendall School; Importance of an Early and Steady Development of the Language Sense; Extracts From a Mother's Letter, by Mrs. Mary F. Kelly; Percentage of Hearing in Illinois School for the Deaf; The Manual Alphabet.

The second booklet, entitled "The Deaf and Their Education," is also a compilation of useful data, covering such matters as: Facts About the South Dakota School; Statistical Information About the Deaf; Statistics of Schools for the Deaf in the United States; The Education of the Deaf, by Supt. J. Lyman Steed of the Oregon School; One Hundred Years in the Education of the Deaf, by Dr. J. Schuyler Long of the Iowa School; and The Deaf in Industry.

Superintendent Tillinghast is to be commended for undertaking the task of bringing together in such convenient form so much authentic data. This is an effective kind of publicity.

National Survey of the Education of Teachers of the Deaf.—The Second Conference on Problems of the Deaf

and Hard of Hearing held at Washington, D. C., on February 1 and 2, 1929, recommended that a comprehensive survey be made as soon as possible of persons engaged in teaching the auditorially deficient. This conference believed that the results of such a survey would be of great value in approaching the problem of improving the personnel for the future, and for the improvement of their training.

Returns from the National Survey of the Education of Teachers have made it seem very desirable to make a more intensive study of the status of the personnel engaged in teaching the deaf. Educational authorities, including outstanding experts in the field of the education of the deaf, worked over a questionnaire for many months before a copy was released to the printer. They reduced it to a minimum number of easily answered questions. Proof copies were used with trial groups of teachers as a final check. These blanks are now being sent out through the United States Office of Education.

The questionnaire, which will be distributed through principals and superintendents of public, private and residential schools throughout the United States, asks each teacher, supervisor and school administrator for the following information: description of work, race, sex, marital status, experience with the normal hearing and the deaf, education and special training for teaching the deaf, salary, degrees, semester credits earned in both education and technical courses for teachers of the deaf, certification, and employment.

Dr. E. S. Evenden, associate director of the National Survey of the Education of Teachers and professor of education at Teachers College, Columbia University, under whose supervision this cooperative study is being made, says: "The personnel engaged in the education of the deaf is urged to give the same excellent cooperation to this intensive study of their group that they gave to the recent National Survey. Each of the 2,600 teachers in public, private and residential schools who replies promptly can feel that he is contributing to the improvement of educa-

tion's service in the United States, especially in this important field of the physically handicapped child."

Catalogue of the Manchester Library for Deaf Education.—From the Manchester University Press, 23 Lime Grove, Oxford Road, Manchester, England, comes a most interesting volume, "Catalogue of the Library for Deaf Education," compiled by Charles W. E. Leigh, librarian of the Victoria University of Manchester. A work of the highest order, it calls for more than usual admiration.

In the Preface we are told that the Library for Deaf Education in the University of Manchester was established in 1919 through a grant received from the Carnegie United Kingdom Trust which made it possible to acquire, in addition to other books, the Arnold Library in 1922 from the National College for Teachers of the Deaf. The Library is available without cost to all who desire information about the education of the deaf, but the Library itself has no funds of its own, and the entire expense of maintenance and administration is carried by the Council of the University.

The Library for Deaf Education now contains about 7,000 volumes, including "works dealing with the various systems of teaching the Deaf, lip-reading, speech-training, psychology of speech and hearing, phonetics, acoustics, and the anatomy, physiology and diseases of the ear, as well as sociological, historical, and other works concerning the Deaf." With the exception of certain books which originally were placed in the Library with the condition that they were not to be loaned out, and a few others which because of their value as rarities are held in, the entire collection of books and materials may be borrowed without cost by registered borrowers.

The scope of the borrowing plan is best explained by these rules.

The books in this Library are available to all individuals, societies, and institutions throughout the United Kingdom interested or concerned in the education and training of the Deaf.

All borrowers, on their first application, must fill in and sign the form to be obtained from the Librarian.

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With each issue of books will be enclosed a form stating the cost of carriage. On receipt of parcel, an acknowledgment must be sent to the Librarian, and the amount of the carriage refunded.

The published catalogue itself is a scholarly masterpiece, a work to delight the eye of one who can appreciate painstaking labor offered in a worthy cause. It is divided into two main parts: A.—Author Index, and B.—Subject Index, and lists books in many languages. For anyone who desires to compile a bibliography on special topics on the education of the deaf it should prove exceedingly valuable, for both parts of the index lend themselves very readily to this purpose.

The work is evidence that the authorities of the Library for Deaf Education consider its collection a public trust that should render the greatest possible service, an example that libraries in this country might well emulate.

The price of the volume is ten shillings sixpence net.

Correction.—We regret that the address of Dr. William H. Thompson, who wrote the article "Leaves from a Psychologist's Notebook" in the last March ANNALS, was given incorrectly in that issue. Dr. Thompson is dean of men and professor of psychology in the University of Omaha, Omaha, Nebraska.

"Sixth Sense" in the Blind.—Popular Science for May, 1932, carried the following item in explanation of the popularly accepted "sixth sense" of the blind. This mysterious new sense, it now turns out, is nothing more than an extraordinarily acute development of the sense of hearing.

Have the blind a "sixth sense" by which they feel obstacles before they touch them? When persons long blind approach a foreign object, they experience a slight sensation of being touched on the face. To study conflicting theories for this mysterious phenomenon, Dr. Vladimir Dolansky, psychologist of Warsaw, Poland, set up an "artificial obstacle," a disk that could be shifted toward a subject. Even when the subject's face was covered by a cardboard mask, he could detect the approach of the disk. But the subject's sensation ceased when his ears were plugged. This solved the mystery.

The blind have developed such acuteness of hearing, Dr. Dolansky concludes, that they can detect the faintest sounds echoed from the obstacle. Almost instinctive is their fear of a collision, and this contracts hair follicles on the face. The tingling facial sensation that results is the blind person's so-called "sixth sense."

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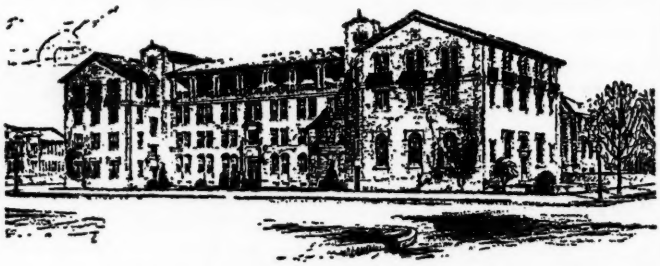

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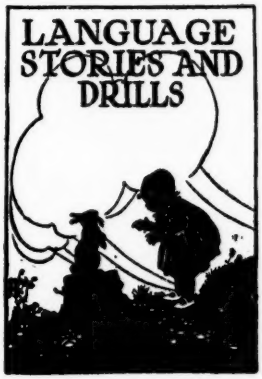

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CONTENTS

ADULT EDUCATION FOR THE DEAF.....*Otis A. Betts* 197

REPORT ON CERTIFICATION OF TEACHERS.....*I. S. F.* 200

CHART WORK IN READING.....*Fannie Day Hurst* 202

ISOLATION AMONG MANY A BARRIER....*Norman G. Scarvie, B.A.* 206

SUBJECT-MATTER PLAN OF TEACHING HISTORY
Elmer D. Read, M.A. 211

THE NEED FOR COOPERATION IN WORK FOR THE DEAF
Arthur W. Blaxall 231

A CONVENTION WORTH GOING TO.....*Robert D. Morrow, M.A.* 234

A SURVEY OF INTELLIGENCE OF DEAF CHILDREN IN MINNESOTA SCHOOLS.....*Mary Shirley, Ph.D., and Florence L. Goodenough, Ph.D.* 238

TEACHING PUPILS HOW TO STUDY.....*Helen Trafford Moore* 248

THE STROBILION FOR THE DEAF CHILD.....*Max F. Meyer, Ph.D.* 252

SOME ORAL READING PROBLEMS IN THE EDUCATION OF THE DEAF
Lloyd Eden Berg 257

MISCELLANEOUS .....*I. S. F.* 260

Trials of a Deaf Man, 260; Aid to Deafness Via Bone Conduction, 261; The Northern California Council for Education of Exceptional Children, 262; Information about the Deaf for the Public, 264; National Survey of the Education of Teachers of the Deaf, 265; Catalogue of the Manchester Library for Deaf Education, 266; Correction, 267; "Sixth Sense" in the Blind, 267.

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